

Architectural Library



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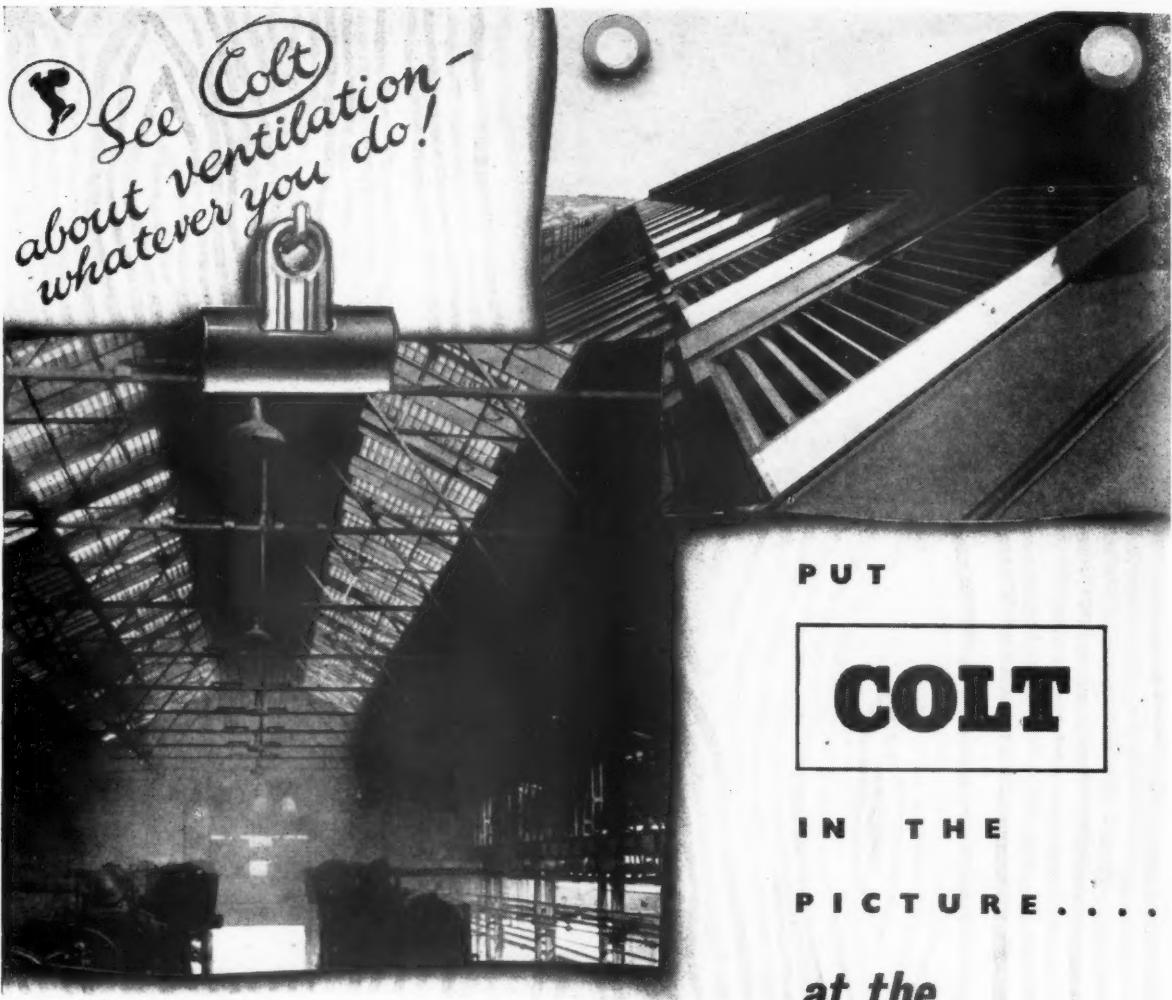
AUGUST 1952

THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

66 PORTLAND PLACE LONDON W1 · TWO SHILLINGS AND SIXPENCE



Notre Dame Estate, Clapham Common, for Wandsworth Borough Council. C. H. James, R.A. [F]. Awarded a 1952 Housing Medal



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Letter from The American Institute of Architects

The following letter has been addressed to the R.I.B.A. by the President, A.I.A.:

Gentlemen,—Last week, while in Washington, I first saw the fine pair of sconces which you so thoughtfully sent to our headquarters, the Octagon House. As you know, they are installed in the historic Treaty Room, which saw the final approval of the Treaty of Ghent by President Madison.

Your kind gesture was deeply appreciated and although you have received grateful acknowledgment from the Chairman of our Properties Committee, I would add my own on behalf of the Board and our membership. They are a distinguished addition to this important room in our Washington shrine.

Besides the evidence of the expression of fellowship from your Institute, they recall the most enjoyable visit of your past President, Graham Henderson, and Mrs. Henderson, and your Secretary, Mr. C. D. Spragg. Very truly yours, (*Signed*) GLENN STANTON.

Books on Architecture for the General Reader

The R.I.B.A. Librarian has prepared a selected list of books connected with architecture for the National Book League. This list is for the general reader, the teacher and student and not for the architect or specialist in architecture. It therefore provides a guide to those architects whose lay friends ask them to recommend a book or books on some aspect of architecture or who wish to give books on architecture as presents. Certain arbitrary limits have been set in making the compilation; only books published in English have been included; those dealing with one particular town or country and, in general, with town planning, have been excluded. Nevertheless, the list is catholic enough, containing books by such authors as Giedion, Gloag, Goodhart-Rendel, Osbert Lancaster, Lethaby, Howard Robertson, John Ruskin, Sacheverell Sitwell, Nikolaus Pevsner, John Summerson, Frederick Gibberd, J. M. Richards, Charles Reilly, Rasmussen, Mumford, Frank Lloyd Wright and Le Corbusier—to select a few names at random. The list is entitled 'The National Book League List. Architecture. Second Series', and is obtainable from booksellers or the National Book League, 7 Albemarle Street, W.1, price 1s.

M.O.W. Exhibition at Cardiff

From 18 to 24 September the Ministry of Works are holding a building plant exhibition at Sophia Gardens Field in Cardiff. The latest equipment will be on view and be demonstrated in use.



Mr. A. S. G. Butler [F] at work examining the 80,000 drawings left by Sir Edwin Lutyens which have been presented to the R.I.B.A. by Mr. Robert Lutyens

Lutyens Drawings

Last autumn, through the generosity of Mr. Robert Lutyens, the R.I.B.A. came into possession of all the drawings left by Sir Edwin Lutyens in the basement of 13 Mansfield Street, W.1. They numbered about 80,000, done up in rolls. Professor Holford kindly lent a large store room in his Town Planning temporary premises at Euston Building, N.W. Mr. A. S. G. Butler [F] volunteered last January to go through them, with a view to selecting what to keep. He has been helped in that rather dusty work by Mr. M. D. Beasley [A] and Mr. John Drew, Headmaster of the Willesden Art School. It has taken so far one or two days a week. The photograph shows the last stage of the first sifting. Mr. Butler suggests it might be called 'We All come to This'.

Members of the R.I.B.A. may be interested to hear that a large number of original sketches—plans and perspectives—by Sir Edwin have come to light from rolls not previously explored for purposes of the historical volumes. A great many of these are for projects not realised, such as a cathedral at Delhi, a great war shrine in Hyde Park, etc. All his major works are represented in some form of sketch—from a thumbnail to a very large drawing—except the cathedral at Liverpool. He is certainly exposed here as an architectural draughtsman of high rank—an aspect which the memorial had not the space to bring out as well as display his buildings objectively.

It is hoped that this autumn the second sifting will be done and that the more valuable drawings may be seen at the R.I.B.A.

Retirement of Mr. G. D. Gordon Hake

Ex-students of the Royal West of England Academy School of Architecture attended in large numbers the end of term ceremonies at Bristol in order to pay tribute to Mr. Gordon Hake [F] who is retiring after 30 years as Principal. When he took charge of the school it had not been in existence long and had about 20 students; today it has over 130. That the establishment of the school as an important element in the life of the West of England and in architectural education generally has been achieved mainly by the efforts of Mr. Hake was fully acknowledged at the various ceremonies.

On 9 July a complimentary dinner to Mr. and Mrs. Hake was held at the Royal West of England Academy, with Mr. Evelyn Freeth [A] in the chair, at which 140 friends in the Academy, University, City and Diocese, together with students and ex-students, were present. The Bishop of Malmesbury proposed the health of Mr. Hake, and Mr. Eustace Button [F]—the school's first student and its honorary secretary for many years—presented to Mr. Hake a cheque and a Georgian pepper pot and to Mrs. Hake a French silver embossed patch box. This function had a most charmingly friendly atmosphere; the wine waiters in immaculate white coats were fourth year students; the menu card bore a highly allegorical design (which we reproduce) by Mr. Noel Keating, the beautiful script lettering of the menu, table plan and place cards being by Mr. Roy Stout, both of whom are students at the school.

At the prizegiving next day Mr. R. H. Brentnall [F], President of the Bristol and Somerset Society of Architects, announced that Mr. Evelyn Freeth had been appointed Principal in succession to Mr. Hake. The awards were presented by Mr. Eustace Button, who said that the original aim of the school had been to train architects who could design anything from a Roman villa to a guest-house but today it trained architects who could design a new town, a £3,000,000 factory, or a block of flats 'poised on stilts.'

After the prizegiving the President of the Students' Club, Mr. W. H. Davies, made a presentation to Mr. Hake, on behalf of present students at the school, of a silver cigarette box and ash tray suitably inscribed. This took place in the courtyard of the school and attracted a very large number of past and present students, who subsequently adjourned to the school bar for the traditional end-of-term party.

We would like to offer Mr. Hake our own congratulations on his long service and our affectionate best wishes in his retirement.

He will continue to be extremely busy, since among his many other local activities he is Chairman of the Bristol Diocesan Advisory Committee, a member of the Council of the Royal West of England Academy and of the Council for the Preservation of Ancient Bristol, and of several other committees connected with architecture and education.

Structure in Building

The second of three technical books for architects suggested by the R.I.B.A. Text and Reference Books Committee has been published. It is *Structure in Building* by W. Fisher Cassie and J. H. Napper [F]. There is a foreword by William A. Allen [A], of the Building Research Station and Chairman of the Committee. Mr. Fisher Cassie is an engineer and Mr. Napper an architect, and both are teachers and practitioners. While we do not wish to anticipate the review which will be published in due course in the JOURNAL, it can be said that this book fully meets the wishes of the Committee in being primarily a text book on structures for architects and architectural students, whereas most text books on this subject, written by engineers, are unnecessarily analytical and too technical for architectural readers. It is published by the Architectural Press, price 30s. The first book in the series of three suggested by the Committee—*Building Materials* by C. C. Handisyde [A]—has been published. The third—*Building Elements* by R. Llewellyn Davies [A] is in preparation.



Royal West of England Academy
School of Architecture

The highly 'allegorical' design on the menu card at the complimentary dinner to Mr. G. D. Gordon Hake, the retiring Principal of the R.W.A. School of Architecture. It was drawn by Mr. Noel Keating who is a student at the school

Unemployment

The dearth of posts for Students who have completed five-year courses at schools of architecture and are now seeking employment either to qualify for sitting for the Examination in Professional Practice and Practical Experience or to earn their livelihood is causing much concern to the Institute. There are at the moment 82 of these Students on the Institute's register of applicants for employment; most of them come from the London area and, therefore, the figure for the whole country must be substantially higher. All the vacancies that have been notified to the R.I.B.A. Appointments Department during the last six weeks or so—except for two or three for complete beginners as colourists or tracers—have been for assistants with considerable office experience. The obvious question that most of these Students are asking is 'How am I to get the experience if no one will employ me because I haven't any?' Neither the Institute nor architectural offices can, of course, create jobs; but employers are earnestly asked whenever possible to afford these young men and women an opportunity to start their careers even at the expense of extending their existing establishments to a small degree.

Tony Garnier Memorial Volume

The R.I.B.A. Library has purchased a volume illustrating the works and original designs of Tony Garnier, who died in 1948. Production has been undertaken by a committee named *Le Comité Tony Garnier*, and the publication is a limited edition of 450 volumes; it has a preface by M. Edouard Herriot, who was for many years Maire of Lyons in which Garnier was City Architect. Copies are obtainable from Vincent Freal et Cie, 4 Rue des Beaux Arts, Paris 6^e, and the price is 3,800 francs. Unfortunately H.M. Customs have imposed an import duty because the publication is in loose plates. The R.I.B.A. have raised the matter officially.



Crawley Development Corporation. (See layout below, right)



Chapel-en-le-Frith R.D.C. Architect, G. Robb [A]

Presentation of Housing Medals and Diplomas

by the Minister of Housing and Local Government

At the R.I.B.A. 16 July 1952

The President in the Chair

The President Mr. Howard Robertson, M.C., A.R.A., S.A.D.G.: It is my very pleasant duty to present the Right Honourable Harold Macmillan, the Minister of Housing and Local Government. I think that this is his first visit to this building, and it is a great pleasure to me, on my first semi-public appearance, to be the person who welcomes him here. That the Minister should have come in person is, I think, not only a compliment to the medallists, but to the whole of the architectural profession.

This is the third occasion on which these medals have been presented. Both the medals and the diplomas are, as you probably know, presented by the Ministry for local government urban and rural housing of high quality in design. I think that all architects feel that this is the finest kind of incentive. That design should be rewarded is something which is very near to the architect's heart.

There is a great deal of work connected with the award of these medals and diplomas, and I think that I ought to express thanks to the Regional Committees which have made the selections, and mention in particular Mr. Forshaw, who had so much to do with the initiation of the



Crawley Development Corporation, West Green sites 2 and 3. Chief Architect, A. G. Sheppard Fidler [F]. Key; black rectangles, 2-storey houses; open rectangles, stores; 3/F, 3-storey flats; B, bungalows for old people; G, garages; C, children's playground

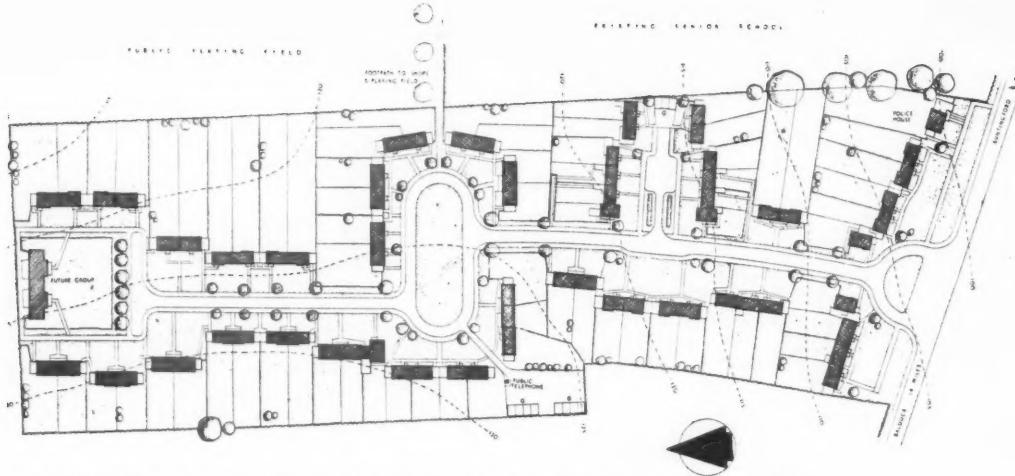
original idea of these awards some years ago.

Our task as architects is obviously to co-operate with the Ministry, but I think that we may blunder occasionally because we do not know the best way in which to co-operate. The Minister is a man of action, and perhaps I might say something about his activities. I think that we appreciate the circulars on planning and services which his Ministry have sent out with the aim of reducing the cost of houses and getting more of them. I think we also appreciate very much the effort which created the Bailey Committee on the design of interiors. The Minister's production of

housing seems to be mounting to a degree which causes immense satisfaction, and even some congratulation in the Press. I shall not say any more except that I feel his motto must be 'The very difficult I shall do today and the impossible tomorrow.'

The Minister then presented the medals and diplomas to the prizewinners.

The Rt. Hon. Harold Macmillan, M.P., Minister of Housing and Local Government, said: You have reminded me, Mr. President, that this is the third occasion on which this ceremony has taken place in the headquarters and centre of the architectural world. You were careful, and perhaps kind, in not thinking it necessary



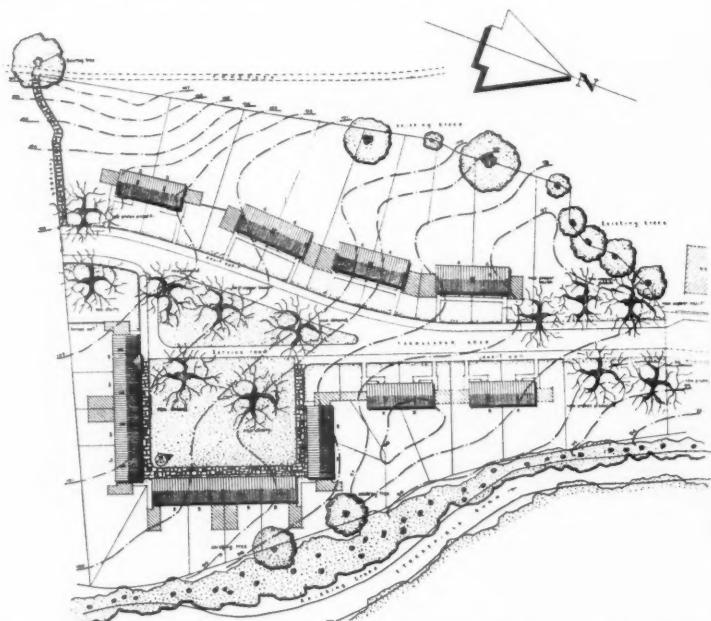
Broughing R.D.C. Greenways, Buntingford, Herts. Architects, Paul Mauger [F] and Partners

to remind the audience that if this was the third occasion it was also the third Minister! I do not know whether it will be my good fortune to be present another year, and so make a breach in a tradition of transience, but it does of course remind us that while you architects are the creators of permanence, we politicians are merely the dim phantoms which flit across the stage!

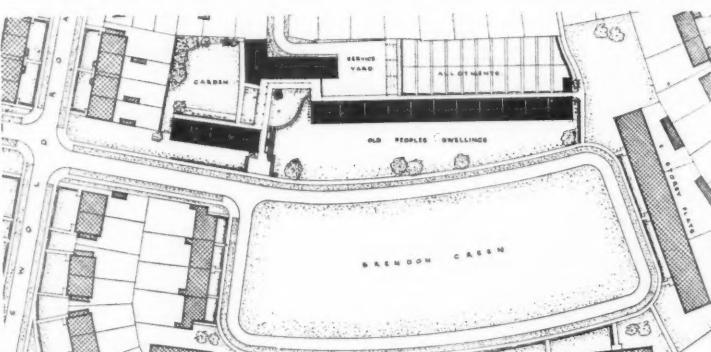
I feel very much honoured to be able to perform this little ceremony and to make these presentations, which carry with them all the best wishes and congratulations not only of myself and my Ministry, but also I know the congratulations and good wishes of all who practise your profession. All cannot win, although I always think that all prize givings ought to be carried out on the principle of Alice, that is, everybody gets a prize! Everybody, I am sure, deserves a prize, and if we select the most successful it is because we all share in their triumph and in their pleasure.

It is a very great pleasure to me to see that some of the competitors who have worked on behalf of the Ministry have been successful, and that the architects associated with the new towns have been among the successful winners in this prize giving. Mr. Costain, I think, knows something about buildings, but he also knows a good deal about selecting an architect, and I am glad to see Harlow and Crawley, for which I have more direct responsibility, among the prizewinning schemes.

I am very glad also to congratulate those Rural District Councils who have been successful more than once on their remarkable feat. I think that in the case of Pershore, Ripon and Pateley Bridge, both in the awards made in 1950 and 1952, schemes which were designed by the same architect have been successful, and Wrexham Rural District Council were also successful in 1950 as well as in 1952. That shows we have a lot to thank them for, and perhaps this competition itself, instituted by my predecessors, has been of some use to you, Mr. President, and to your colleagues, in



Hexham R.D.C. Stocksfield, Northumberland. Architects, W. Dixon and Son [L/L]



Southampton County Borough. Old People's Homes, Millbrook. Architect, L. Berger [A]



Broughing R.D.C. Architects, Paul Mauger [F] and Partners



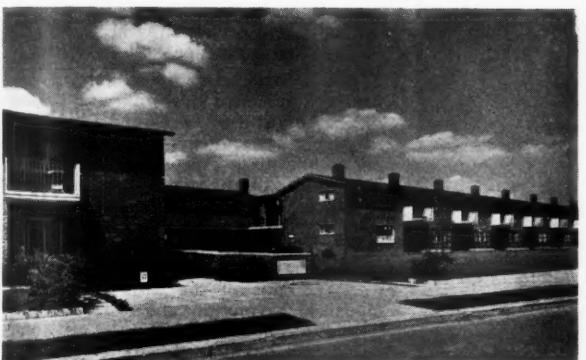
Exeter C.B.C. Architect, H. B. Rowe [F]



Hexham R.D.C. Architects, W. Dixon and Son [L/L]



Brackley R.D.C. Architect, G. F. Lawson [L]



Southampton C.B.C. Architect, L. Berger [A]



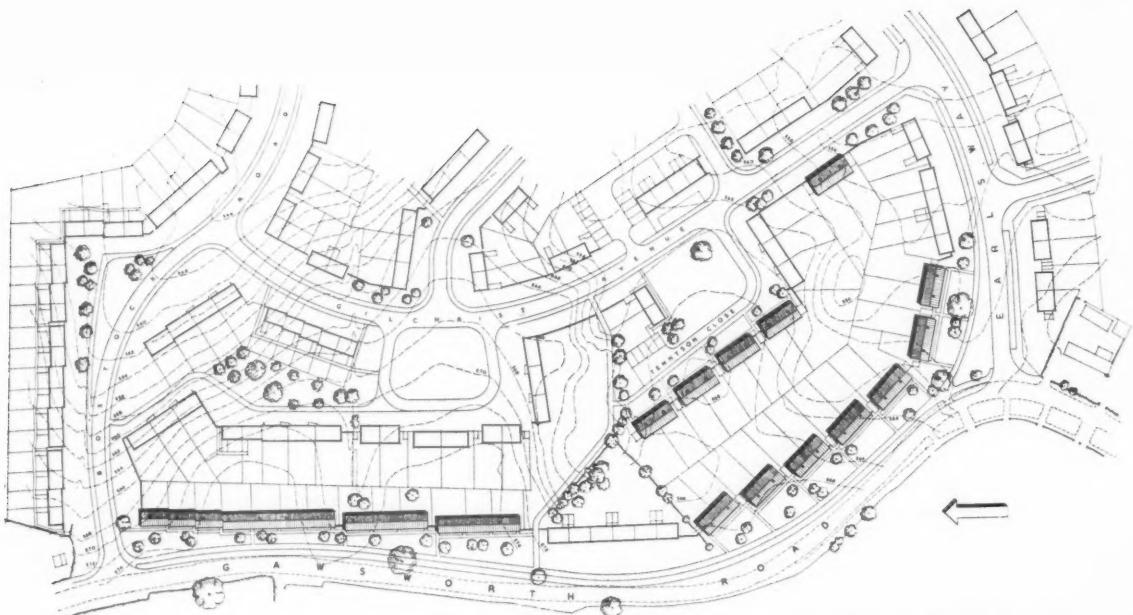
Aylesbury R.D.C. Architect, R. C. White [F]



Wrexham R.D.C. Architect, J. Brian Cooper [F]



Stroud R.D.C. Architect, B. J. Ashwell [A]



Borough of Macclesfield, Weston housing scheme, Gawsworth Road. Architect, E. A. Heppenstall [4]. Above, the layout; left, general view



stimulating what is a vital aspect of our housing campaign.

As you will all know, I have to struggle not only with the physical difficulties, money difficulties and economic difficulties which confront this island, but I have also to use every conceivable device to get the maximum production of houses out of the limited supplies at my command. I think history will show that this island which, by a strange paradox of victory, was turned from the greatest creditor country in the world into the greatest debtor nation in the world, whose wealth was consumed for the second time in my lifetime, and whose manhood was maltreated, tortured and destroyed, has achieved a remarkable performance in that it has been able, in the immediate post-war years, to turn so vigorously to this task of rehousing its population. I think it will be held to the righteousness and credit of its people.

Nevertheless, I am conscious that I have to ask you to do things which one would not normally wish to do. I have to try and get the solution, so far as it is possible, to the age-old problem of how to get more than a pint out of a pint pot. And it is really for this reason that the continual

flow of circulars, reports and advice, which must be boring to you, comes from my Ministry, from my regional officers and from various other organisations. I think that I am fortunate in having Mr. Forshaw, a distinguished architect and also a man of such great charm, for you will probably accept from him that which you would not take from anybody else!

I want to assure you that if I have asked for houses of smaller design—what I have christened the ‘people’s house’—it is because I am trying to get an additional 10 per cent of houses out of the same amount of materials. That 10 per cent may mean 20,000 or 25,000 additional families in homes. I am not asking that of you or of the authorities whom you represent out of a sadistic desire to cut the standards of the people. I believe that your skill and the skilled advice which I am able to command is able to achieve this material saving without injury to design and to beauty. It is to you and all those of the housing committees, districts, counties, the 1,500 local authorities who are charged with this task, and the architects who work with them, to all those who are responsible for design, that I look to do what seems a difficult but, I am sure, not impossible task.

I am sure that many of these economical methods can, with your skill and ingenuity, be so adjusted as to make well designed, attractive and permanently beautiful additions to our landscape.

I have travelled in this country a good deal in the few months I have been in office. Almost every week-end I have been to one place or another—we are not allowed out of the place except at week-ends—to large cities, county boroughs, corporations, small rural districts, boroughs large and small—and I have been immensely struck by the interest, ingenuity and keenness displayed in breaking away from the bad work perhaps of the early part of the industrial revolution and what followed it, and in trying to create in the new forms of modern building something which will be as graceful and as permanent an addition to our artistic assets as the old villages of the past. I see every variety of method and skill in the use of colour and design, and it is, I am certain, possible—in fact the possibility has been demonstrated—to use non-traditional labour-saving methods of house building and by the skilful use of colour and other methods to make the houses something of which we can be proud. It is really because, in whatever time I have to serve in this work, I naturally do not want to be remembered merely as the Minister who somehow was able to deal with some of the material difficulties, that I rely on you to see that we continue to raise the standard of design.

There are going to be a lot of problems ahead. We cannot disguise that. Anyone who takes a realistic view of the economic situation of the nation will know it. I shall



Caerphilly U.D.C. Alun Rogers, A.M.I.C.E.



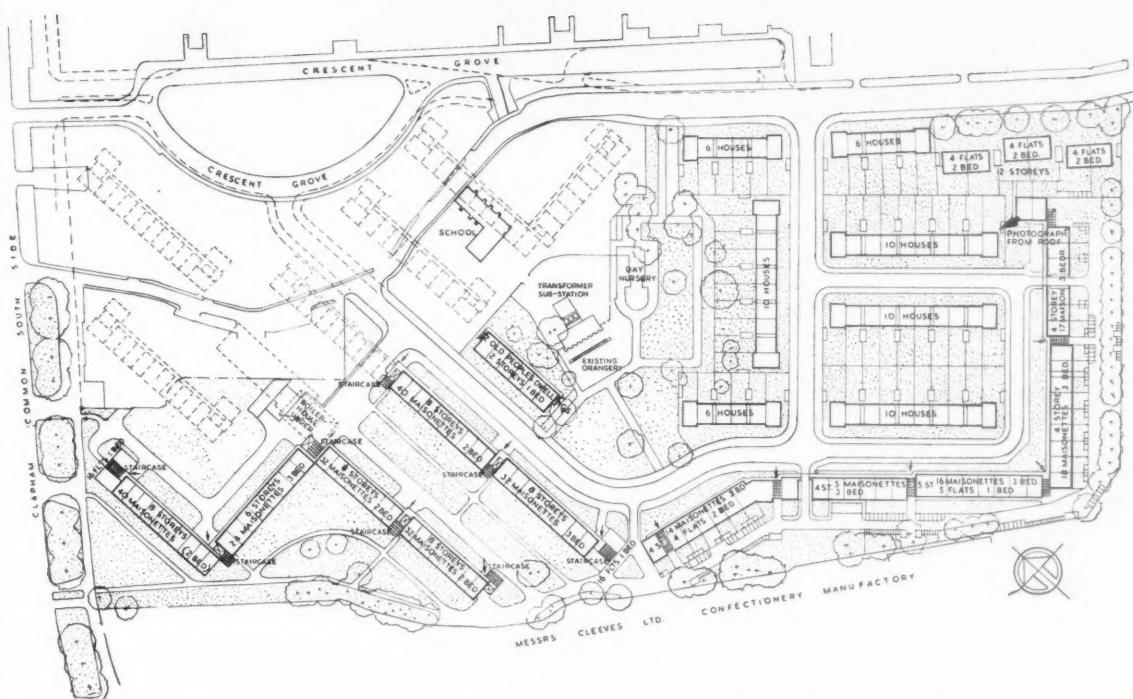
Ripon and Pateley Bridge R.D.C. Architects, Needham, Thorp and White [F/F]



Pershore R.D.C. Architect, T. R. Bateman [A]



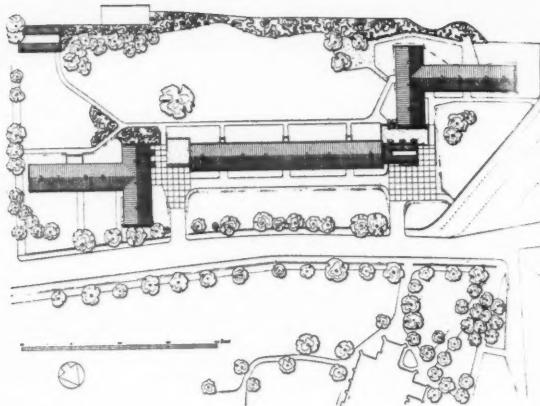
Wandsworth B.C. (See layout below)



Wandsworth B.C. Notre Dame estate layout. Architect, C. H. James, R.A. [F] (See also the picture on the cover)



Nuneaton B.C. Church Street flats. Right, the layout. Architect, Frederick Gibberd [F]



Above: Harlow Development Corporation. Architect, Frederick Gibberd [F]



Right: St. Marylebone B.C. Architects, Louis de Soissons, A.R.A., and Partners [F/A]

soon be asking you to do some revolutionary and unorthodox things. But I am determined that so long as ingenuity, effort and skill can do it, we shall press forward with our housing programme. If we meet with difficulty in one direction—the difficulty of foreign exchange, or difficulty in the imports of certain commodities, for instance—then somehow or other we shall use your skill and ingenuity to overcome it. And I shall look confidently to you to be the pioneers in offering no resistance to any method, any novelty, however new and startling, which may look to promise success; so long as you can combine productivity with good design.

I am indeed grateful to you, Mr. President, for allowing me to come here and present these medals. I look to you and all that which you represent with confidence, and I am certain that you will be able to make an even greater contribution in the future than you have in the past. Your ingenuity will be still more tested and tried, but I know that together we shall succeed because we are determined not to be defeated.

Alderman Willison (Chairman, Wands-

worth Metropolitan Borough Council Housing Committee), proposing a vote of thanks to the Minister, said that it was with great pride and pleasure that he did so. The Minister was a man who radiated from his office throughout his Department many constructive ideas. He was full of energy, demanding attention and results. Some of those present had been fortunate enough to listen to him recently at County Hall, when he gave a most inspiring address to the housing conference there, and they had heard another such address today.

Alderman Willison said he was sure the gathering thanked the Minister most sincerely for sparing some of his valuable time, for anyone who had anything to do with housing knew that the Minister and his Department were working as many hours of the day as it was possible to work. Those who felt they had problems would go back to their councils and housing committees stimulated by the address the Minister had given them.

Councillor G. W. Matthews (Chairman, Wrexham Rural District Council Housing Committee), in seconding the vote of thanks, said it was a pleasure for him and

his colleague from Wrexham to come here on a second occasion; like the Minister, they were in the lap of the gods as to what would happen to them by the next time! They were delighted that a prize had gone for a second time to North Wales, because its inhabitants were apt to be regarded rather as backwoodsmen. Some of its villages had been so badly planned in the past that two buses could not pass, but a better heritage was being left to posterity, thanks to town and country planning.

Councillor Matthews added that he would have liked the Minister to say a little more about his future plans, and referred to a well-known London Member of Parliament who had said that the houses which had been built were such that he had to put his feet through the window to put his trousers on. Councillor Matthews said he hoped the Minister would not revert to such practices, and was sure he would not. He appreciated the promise made by the Minister that he would do all he possibly could in the future, and said the Minister on his side could rest assured that the representatives of local authorities would play their part.

Symposium on Concrete Shell Roof Construction

LAST MONTH the Cement and Concrete Association held a symposium on concrete shell roof construction at which 12 papers were read: No. 1, *Domes, vaults and the development of shell roofing*, by Leo De Syllas, A.A.Dip. [A]; No. 2, *Various forms of shell roofing and their application*, by Edward D. Mills [F]; No. 3, *Architectural problems of shell concrete construction*, by E. Leslie Gale, M.C. [F]; No. 4, *Existing methods for the analysis of concrete shell roofs*, by J. J. McNamee, Ph.D.; No. 5, *Flexibility coefficient methods and their application to shell design*, by A. Goldstein, B.Sc., A.M.I.C.E., A.M.I.Struct.E.; No. 6, *Research on concrete shell structures*, by P. B. Morice, B.Sc., Ph.D.; No. 7, *Theory of new forms of shell*, by R. Stewart Jenkins, B.Sc., A.M.I.C.E.; No. 8, *The combination of shells and prestressing*, by C. V. Blumfield, B.Sc., A.M.I.C.E., M.I.Struct.E.; No. 9, *Design and construction from the economic aspect*, by H. G. Cousins, B.Sc., M.I.C.E., M.I.Struct.E.; No. 10, *Construction of Skelton Grange Power Station at Leeds and a factory at King's Lynn*, by H. E. Manning, B.Sc., M.I.C.E., M.I.Struct.E.; No. 11, *Formwork used on a factory at Greenford*, by H. F. Rosevear, M.I.Struct.E.; and No. 12, *Construction of self-supporting reinforced concrete vaults at Antwerp*, by Carlos Wets, Eng.A.I.Br., and André Paduart, Eng.A.I.Br.

Mr. De Syllas dealt with the development of shell concrete construction, and traced its historical and architectural implications. After mentioning that experiments in the practical use of shell concrete started barely 30 years ago, he said that in 1941 Giedion, in his *Space, Time and Architecture*, made only a passing reference to the egg-shell concrete vaulting which Freyssinet used for some locomotive sheds at Bagneux, near Paris, in 1929; adding that since then that particular branch of reinforced concrete engineering has produced forms of almost fantastic daring.

Mr. De Syllas then said, 'To the historian writing only ten years ago these fantastic forms had not yet sufficiently affected the designers' vocabulary to suggest a significant change in the architectural form of new buildings. The development of the technique which has brought about these new forms is a logical outcome of preceding work in the whole field of reinforced concrete design. For the designer, however, the significant question is how far these forms bear a relation to an earlier architectural vocabulary and whether techniques bearing an outward resemblance in form, but arising from quite different structural solutions, create new aesthetic problems.'

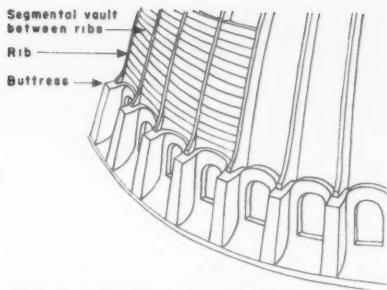
'Structurally, the history of architecture is simply the story of man's efforts to enclose space, as a protection against the

weather—and to admit daylight to that space in the most effective way. The method of enclosure has taken two main forms—forms, therefore, into which the world's architecture can be broadly divided—beamed and arched.'

The Romans, Mr. De Syllas said, were the first to exploit the possibilities inherent in the arch, thus enabling them to embark on the roofing of large and complex buildings. The arch brought about a revolution in structural technique and a vast liberation for the planner, but it also created its own problems, because—as the Arab proverb says—the arch never sleeps but exerts thrusts and tries to push over its supporting walls. The history of Roman, Byzantine and medieval architecture can be traced in the solution of the problem of opposing the thrust of the arch, whether in its simplest form or in its more complex developments of the vault and the dome. Systems of decoration, methods of daylighting, mosaics and so on were subsidiary to the main theme of the vault or dome creating the thrust, the abutment exerting counter-thrust, and their relationship to the spaces that had to be enclosed.

The increasingly complex requirements of the plan demanded structural solutions giving greater freedom in the organisation of the space to be covered. The massiveness of the abutment had to be reduced if such freedom was to be achieved, and the need for the admission of daylight constantly reduced the amount of solid wall which could be employed. By examining one building, Santa Sophia at Constantinople, in some detail it was possible to show how these competing requirements were related to a whole structural solution.

'The arch,' Mr. De Syllas said, 'when extended as a simple tunnel over parallel walls, needs enormously thick walls to resist its outward thrust. When the arch is swung round over a circular plan, forming a dome, it exerts its thrust continuously around the circumference. Broadly speaking, there are three solutions of this problem of thrust—the dome's tendency to burst outwards at about a third of the way above its springing, where tensile stresses are greatest; the first by means of weight in the surrounding wall—the Roman method; the second by treating the dome itself as a "lobster pot" or series of radial ribs, so that the thrust at the circumference shall be intermittent rather than continuous—the Byzantine method; and the third by tying the dome in at its potential bursting point with a great chain—the Baroque method. In Santa Sophia almost all the problems inherent in the dome were solved; this building still remains the greatest unbroken floor area covered by a dome in the world, and it solves the four major problems of enclosing a large space in this technique of construction. The



Typical Byzantine roof construction

problems were—firstly to distribute the thrust of the dome through ribs, as with the vault, so as to substitute the simple abutment for massive walling; secondly, to keep the dome light in weight at the apex so as to reduce thrust and lower the height of the bursting point; thirdly, to place the dome over a planned form other than a circle; and, finally, to admit daylight into the space below the dome.'

'Even a superficial analysis of Santa Sophia shows how these four problems were solved, and how the solutions were integrated to produce an architectural unity. The central dome is barely 100 ft. in diameter, but being abutted on the east and west by semi-domes of the same diameter, the resulting unbroken floor space is about 225 ft. long. This space is surrounded by low but wide aisles of other subsidiary areas—giving a remarkable series of vistas—covered with vaults which at their apex flatten out into saucer domes.'

'In order to solve the first problem, that of distribution of thrust, the "lobster pot" construction was used, that is brick ribs, 40 in number, running from circumference to apex. A miniature segmental vault spans the short distance from rib to rib—so flat in curvature that the dome presented an unbroken soffit for the mosaic worker. The thrust is taken down these 40 ribs and at the base of the dome each rib is met by a small buttress. The ring of buttresses which take up the thrust of the ribs of the central dome are nearly 150 ft. above the ground, and the thrust still has to be conveyed onwards and downwards. The central dome and its surrounding ring of buttresses is born aloft on four great arches. Those on the north and south sides pass on their thrust to the big semi-domes which, in their turn, are abutted by other semi-domes over apsidal spaces, and these again, in their turn, carry the thrust down—considerably sub-divided by now—to other small buttresses and so down to the earth. The arches on the east and west side of the central dome have their thrust resisted by four enormous buttresses pierced at low level by passage aisles. These buttresses emerge externally above the aisle roofs.'

'Turning to the second problem, the achievement of lightness at the apex of the dome, all Byzantine domes were kept as thin as possible and as low in curvature as was consistent with safety—the object being always to keep the potential bursting point as low down as possible. Although



Factory at Brynmawr, South Wales. Architects; Architects' Co-operative Partnership [A/A]

Byzantine construction, like Gothic, was scientific in principle, there must have been some trial and error. The first dome built over the central space at Santa Sophia crashed after a few years, and the present one was built to a higher curvature and with an improved system of abutment. The dome material used was always as light as possible—hollow brick, concrete with a pumice aggregate, or a series of interlocking clay pots. The Byzantine builders were concerned more with the interior than the exterior, more with the dome as a field for mosaic than as an external feature in the urban scene, and they never attempted the task—structurally quite illogical—of crowning the dome's apex with a cupola. This was left to the Baroque builders, for whom it created a special problem.

In dealing with the problem of the admission of daylight into the space below the dome, Mr. De Syllas remarked that it said much for the unity and integration of Byzantine art that the solution of the abutment problem also solved the daylight problem. "As each rib of the 'lobster pot' comes down on to its own little buttress the space between the buttresses is completely freed and can become an aperture. Thus a ring of windows was provided just at that very point where more primitive structures, for example the Parthenon, had needed mass and weight."

Continuing, Mr. De Syllas said that the geometrical forms of shell concrete frequently bear an architectural resemblance in silhouette and mass to these earlier structures, particularly in the spaces they create in internal volume. An examination of the use of concrete as a plastic material for the enclosure of space, however, will show the fundamentally different origins of these outwardly similar forms.

"The tensile quality of structural steel and steel reinforcement in concrete has enormously extended the span of the lintel and tends to obscure the inherent limitations of the system. This is particularly true in the development of cellular types of structure, which remain closely related to human and domestic scale." The archi-

tecture of mass is essentially the architecture of equilibrium—not necessarily passive equilibrium, but an equilibrium of compression, with such varying expressions as the massive Roman arch and the soaring Gothic vault. The introduction of materials in which the sense of their tensile quality is allowed to be fully expressed has created a new aesthetic. It is an aesthetic which needs no longer to enclose space but merely outline it. In parentheses it must be admitted that the misuse and disguise of tensile structure may make it appear to do otherwise.

In his paper on various forms of shell roofing and their application, Mr. Edward D. Mills said, "The problem of covering large areas using the minimum of intermediate supporting members is one which has appealed to architects and engineers for centuries, and the varying solutions to this problem have resulted in some of the world's most exciting buildings in all ages, from the dome of St. Peter's cathedral in Rome to the rectangular shell concrete domes at the rubber factory at Brynmawr in South Wales. Many materials have been used for large span roofing in recent years, including structural steel, aluminium, timber and reinforced concrete, usually in the form of a trussed framework covered with a light non-structural sheeting. One of the major difficulties connected with large span construction arises from the self-weight of the materials employed, and for this reason reinforced concrete in its normal form is not ideal. The development of various forms of stressed skin structure, where the enclosing monolithic membrane is capable of transmitting loads in more than one direction simultaneously, has resulted in a wider and more economical use of reinforced concrete in large span construction because of the considerable saving in dead weight. Shell membrane concrete construction is a relatively new structural technique, but it has a wide variety of applications capable of producing new and exciting architectural forms."

"The reinforced concrete shell is a

development of the structural slab making use of the slab's ability, when suitably shaped and reinforced, to transmit loads in all directions within its surface. In shell construction the strength properties of reinforced concrete are employed to their fullest advantage, resulting in a considerable economy in materials used, and a corresponding reduction in dead weight. The first requirement in the design of a shell roof is that stiffening should be provided to maintain the curved slab in its required shape; by means of appropriate reinforcement it can then be used not only to take loads across the breadth of its surface, but also along its length. Thus in the case of a single shell curved in one direction in the form of a barrel vault, the shell acts as a beam in the length of the barrel and forms in itself a completely self-contained structural element."

"The most common concrete shell roofing is the construction of shells curved in one direction only in the form of barrel vaults. This lends itself most readily to repetition and standardisation and can therefore be used to cover any type of building of large area which is capable of being divided into a number of standard rectangular bays."

In considering the provision of daylight in buildings roofed with concrete shells Mr. Mills said it is important to remember that certain forms of shell roofing, through their shape, facilitate the provision of a high level of daylighting. Asymmetrical barrel vaults are particularly suitable for the construction of north-light roofs, and provide a very good distribution of natural light.

"On the Continent many industrial buildings have been erected with symmetrical short shells, each shell being tilted, with glazing introduced in the spandrel formed where each shell projects above the adjoining one, giving a series of conoidal shapes; the shape of the shell being retained by means of an internal bowstring truss. It is claimed that this particular form of north-light roof gives a more even distribution of light than the normal asymmetrical north-light shell, but so far it has not been used in Great Britain. Shell roofs of this type have been constructed in South Africa without the internal bowstring truss, and these have proved very satisfactory."

The application of corrugation to a concrete shell to increase stiffness produces the second principal type of shell construction, the shell curved in two directions, as opposed to the cylindrical shell or barrel vault curved in one direction only.

Of more general application is the shell curved in two directions on a square or rectangular plan, in dome form, as in the factory at Brynmawr, where each dome is 90 ft. by 70 ft. and 3 in. thick, stiffened by reinforced concrete lattice girders along the four sides which provide clerestory lighting. The domes are supported at the four corners and separated by a flat concrete walkway.

Considerable experimental work, Mr. Mills said, has been carried out in the past few years on shell construction, and it is obvious that new and interesting design

developments can be expected in the future. Among these are the possibility of pre-casting shells and the combination of prestressing techniques and shell construction. The report of the Joint Intelligence Objective Agency on German construction methods records the mass-production of precast cylindrical concrete shells, each covering an area of 33 ft. by 16 ft., for a steel works during the last war.

In Czechoslovakia small cylindrical shells have been constructed entirely of glass blocks with thin mortar joints between the blocks. In the United States elliptical shell domes have been constructed, in connection with sewage plant, of 150 ft. diameter and a concrete thickness of 3½ in. These shells are complete enclosures as they start at ground level and form in one monolithic unit both walls and roof of the structure. By this means all the loads of the structure are transferred to the ground by the dome itself, offering an entirely new form of aesthetic expression by reason of the combination of the space-enclosing skin and the structural element of the building. As the proper design of shell concrete structures requires intricate calculations by the engineer it is essential that collaboration between architect and engineer should begin when the project is at the earliest stages of its inception and design.

The paper by Mr. E. Leslie Gale on the architectural problems of shell concrete construction dealt with the practical aspect of the design and construction in that technique. He stressed the need for the services and the building to be planned in detail at the outset, if it was to be aesthetically satisfying; the services cannot be left as an afterthought to take care of themselves.

The first problem is to decide the shape of the shell roof and the grid spacing of the columns. Although special shapes and very large spans are possible, Mr. Gale said that the smaller the spans the more economical will be the overall cost and the consumption of steel per unit area. Internal stiffening beams break the continuity of the roof and impede the services; it is preferable to design with upstand stiffening beams or arch ribs. The absence of truss members gives the building a greater effective height, and the springing of the arch can be 2 ft. or 3 ft. less than the comparable measurement from floor to tie-beam in a steel-framed structure.

The rise is generally $\frac{L}{10}$; if the rise is too great the slopes of the barrels at the valleys will be too steep for the concrete to be placed without top shuttering.

The most economical grid is a ratio, span to chord width, of 2 : 1, e.g. 60 ft. by 30 ft., 40 ft. by 20 ft., the span being, of course, the length of the shell between supporting columns. Larger ratios up to 4 : 1 are possible, but these designs will require dropped valley beams instead of the more simple feather-edge valley.

The grid spacing of a north-light barrel is generally of the order of 3 : 2. It should be remembered that the maximum length

of glazing bar permissible without the introduction of an intermediate glazing purlin is 10 ft. 6 in.

The thickness of the shell is generally either 2½ in. or 3 in. The reinforcement usually consists of layers of fabric near the top and bottom of the shell with longitudinal or diagonal bars between them. In addition there are short bars connecting the shell to the beams along the ends and edges of the barrel. The proportions by volume of the concrete are usually: (a) 1 : 2 : 4 in foundations, columns, beams, slabs and shells. (b) 1 : 1½ : 3 in upstanding portions of beams where the stresses are usually higher. The maximum size of coarse aggregate used in the shell is usually $\frac{3}{8}$ in.; for the remainder of the work the maximum size is usually $\frac{1}{2}$ in. The shell should be concreted in two thicknesses in one operation, construction joints in the shell being reduced to a minimum, but in no case within 8 ft. of an internal stiffening beam. The portion of an upstand beam above the shell should be concreted as soon as possible after the shell.

Mr. Gale then dealt with thermal movement, pointing out that the architect's problem, in conjunction with the engineer, is to make provision for the introduction of expansion joints through stiffening beams, columns and the main structural elements. As the shell itself expands and contracts within calculable limits Mr. Gale suggested the following precautions: (a) enclosing walls can be carried on ground beams supported on column foundations, but there must be expansion jointing between wall panels and columns; (b) where windows are taken up to the underside of stiffening beams or edge beams the sashes can be divorced from the main structure by allowing the window heads some freedom of movement in small channel lintels; (c) care must be taken in dimensioning any internal glazed or other frames taken up to the soffit of the shell; adequate clearances must be allowed to enable the shell to move and some form of slotted fixing is desirable; (d) attention must be given to weathering the junctions of shell with stiffening and edge beams, and where openings are made through upstand beams for the passage of rainwater. Cover flashings must allow for movement.

A concrete shell 2½ in. thick has a low resistance to the passage of heat, its U value being 1.40 to 1.50, so usually additional insulation will be required. The most common method has been to use $\frac{1}{2}$ in. soft board left as permanent shuttering, but this use of soft board is unsatisfactory; no positive method seems to have been developed which guarantees that the board will adhere to the shell after the shuttering supports have been removed. With modern forms of shuttering there is no need to use soft board to give a fair-faced soffit; in any case the insulating medium is usually more efficient if placed on top of the shell. As alternative materials for external insulation Mr. Gale mentioned foamed slag, vermiculite, and expanded clay aggregates.

The factors influencing the choice of external finish are: resistance to weather and to light traffic; ease of maintenance;

length of life; and cost. In some existing buildings no external weathering was applied, reliance being placed on the compactness of the concrete with the addition of a waterproofer in the mix, but Mr. Gale said he did not consider this to be good practice. He gave as available materials bitumen/hessian and cold bitumen processes, bituminous roofing, and asphalt. Felspar chippings, or a lime and tallow wash, will act as a solar reflector.

As regards internal finishes, Mr. Gale said that provided a modern system of shuttering is used, it is quite safe to leave the soffit of shell roofs as struck from the steel forms. Some slight indication of patterning will remain, but this is not unpleasant. The soffit adapts itself to the use of normal plasters or special vermiculite plaster. Asbestos spray is being used more extensively as an internal finish to shell roofs as it provides for thermal insulation and anti-condensation and gives some measure of sound absorption. The U value of $\frac{1}{2}$ in. spray on 2½ in. shell concrete is 0.43.

In speaking of services Mr. Gale pointed out that in general terms the beauty of a shell roof lies in the unobstructed roof space. One of the major problems confronting the architect is to see that, after having taken the trouble to construct a roof from which truss members have been eliminated, he does not proceed to clutter it up with an array of pipes, unit heaters and conduits, which become all the more unsightly against the smooth clean interior surface.

'It is, therefore, essential in shell concrete construction that a master plan of the services is prepared before the job starts, co-ordinating the position of all pipes and conduits which may then be concealed in the shell itself, or arranged alongside beams. The position of all holes through stiffening beams and arch ribs and fixings for pipes must be known at the outset.'

If unit heaters are installed at high level they are best mounted from the columns or beams and not slung from the shell. Ducts from plenum systems can be arranged longitudinally along the valleys with discharge points through grilles at intervals.

In artificial lighting far too little use has been made of the shell as a light reflector; so many otherwise pleasant shapes have been ruined internally by some form of pendant dropped from the shell; effective lighting can be obtained by fixing bare fluorescent tubes in continuous lines to the soffit of the shell with the chokes grouped together on the stiffening beams. Batteries of tubes have been unobtrusively mounted on each side of valley beams, casting the light upwards to give a very effective diffused light. Some paint manufacturers have produced distempers with a high reflective value.

The problem of drainage from the catchment area provided by a series of barrel vault roofs is quite simple. The valleys between barrels are themselves huge gutters and the junctions between barrels and edge beams form admirable eaves gutters.

The Wellington Museum

Apsley House, Piccadilly, W.1.

IN THE DAYS of King George II, at what is now known as Hyde Park Corner, there used to be a row of cottages extending eastward from the entrance gates of the park to the 'Pillars of Hercules', an inn mentioned by Fielding in *Tom Jones*. In the cottage next the gates lived a man named Allen, and Mrs. Allen kept an apple-stall in front of the cottage. One day the king saw Allen and, learning that he was one of the soldiers who fought under him at the battle of Dettingen in 1743, asked what he could do for him. Plucking up his courage Allen asked for a piece of ground so that he could have a permanent apple-stall on his old spot, and the king granted his request. Years later Allen's descendants sold the plot, and it came into the possession of Henry Bathurst, Baron Apsley, Earl Bathurst and Lord Chancellor, who in the years 1777-8 built there a small red brick villa.

It is said that the Chancellor designed the house himself, and in doing so overlooked the need of a staircase to get from the first to the second floor, but more authoritative records state that Robert Adam prepared the designs. It would seem that the Baron's ability as a Chancellor was not held in high estimation by his contemporaries, for it is related that Lord Campbell somewhat unkindly said that the building of Apsley House was 'perhaps the most memorable act in the life of Lord Chancellor Bathurst.'

Be that as it may, in 1805 the house was bought by Lord Wellesley, who sold it to his brother Arthur Wellesley, the Duke of Wellington, in 1817. The Duke became Prime Minister in 1828 and so had an official residence in Downing Street. This gave him a convenient opportunity to enlarge Apsley House, and he commissioned Benjamin Dean Wyatt, who was at one time his private secretary, to carry out additions and improvements. These included building the present western wing which contains the Waterloo gallery; adding the Corinthian portico to the Piccadilly front, and facing the whole house with Bath stone. The Duke was annoyed at the cost of the work, as the original estimate was £14,000 and the final account amounted to £42,000. The Duke died in 1852, at the age of 83, and after his death no major structural changes were made in the house.

In 1947 the present (the seventh) Duke presented the house to the nation with some of its contents and other objects connected with the first Duke, and the terms of the gift were incorporated in the Wellington Museum Act of 1947, by which



Apsley House after restoration

the property became part of the national treasure but reserved certain of the apartments for the private use of the Wellington family. By this Act Apsley House itself was vested in the Minister of Works, who thus became responsible for its maintenance, while the chattels were vested in the Minister of Education, under whom the museum is administered by the Victoria and Albert Museum.

Before the premises could be put into use as the Wellington Museum it was necessary to make good the damage done by bombs that fell near in the last war, and also to renovate the house both inside and out, a work that has been carried out by the Ministry of Works in consultation with Sir Leigh Ashton, F.S.A., Director of the Victoria and Albert Museum, and the Ministry are to be congratulated on the sympathetic skill and restraint with which they have performed the task of restoring the rooms to the appearance they had in the time of the first Duke, so far as it was possible to do so.

Little structural alteration was required, what there was being confined mainly to the basement, where lavatories for the public have been installed with a new staircase leading to them from the inner hall. The former kitchen has been turned into a boiler room for the hot water central heating, an adjoining room being adapted to form a fuel store with a hoist going up to the pavement level of the one-storey wing that projects on the eastern side of the forecourt. Minor works have been carried out to the private portions of the house to make them suitable for the Wellington family and to separate them from the museum portion.

On the ground floor the apartments forming the museum are the entrance and

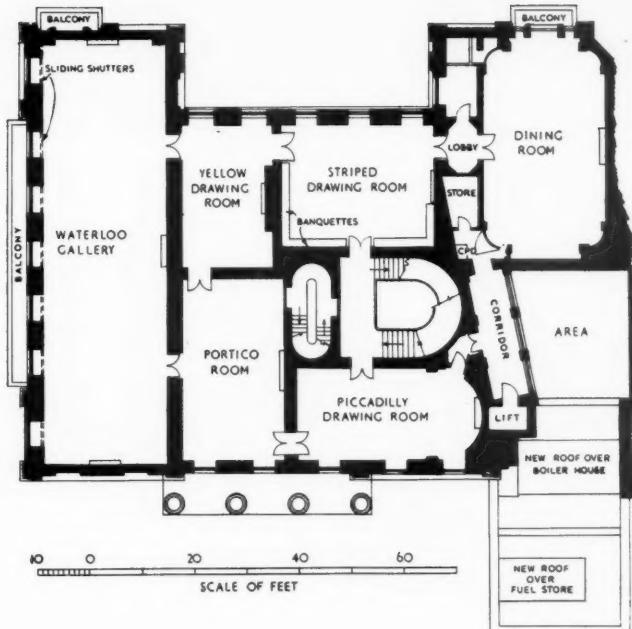
inner halls, the muniment room and the main staircase. The walls of the two halls have been marbled to make them present the original appearance as far as possible, but the walls of the muniment room have been painted, as the show-cases take up most of the wall space. Little work was needed to the main staircase except general redecoration and the repair of the glazed dome that gives light to the well.

The main galleries of the museum are on the first floor, and comprise the dining-room, the portico room, the Piccadilly, striped, and yellow drawing-rooms, and the Waterloo gallery. It will be seen from the accompanying plans that these rooms intercommunicate without any general access passage.

The Piccadilly drawing-room, a pleasant room with an apsidal end, was originally hung with grey damask but has now been painted in Adam colours. In the adjoining portico room, so called because it looks out through the portico, the original ceiling was considerably damaged, and it had to be lifted and the plaster key strengthened



The entrance hall



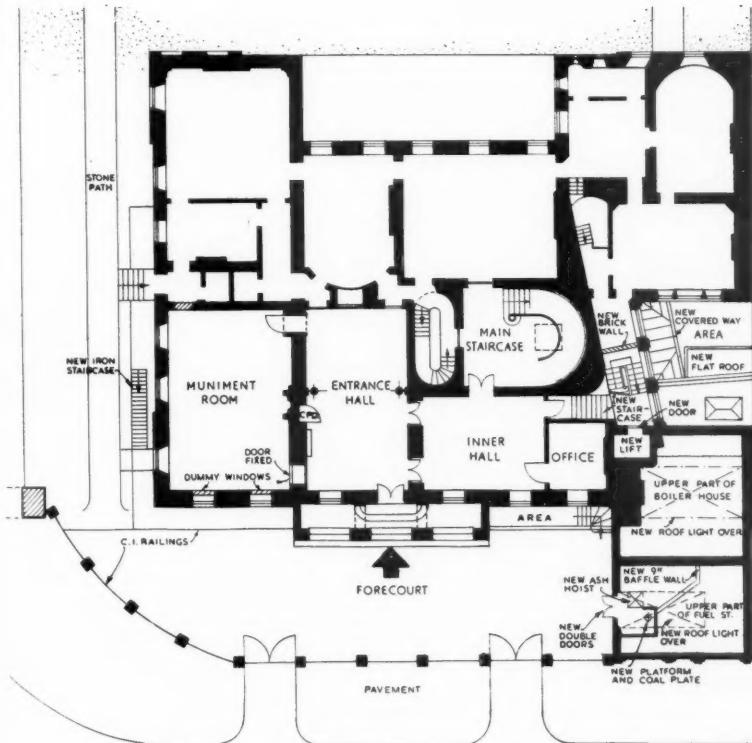
The first floor



The main staircase



The yellow drawing-room



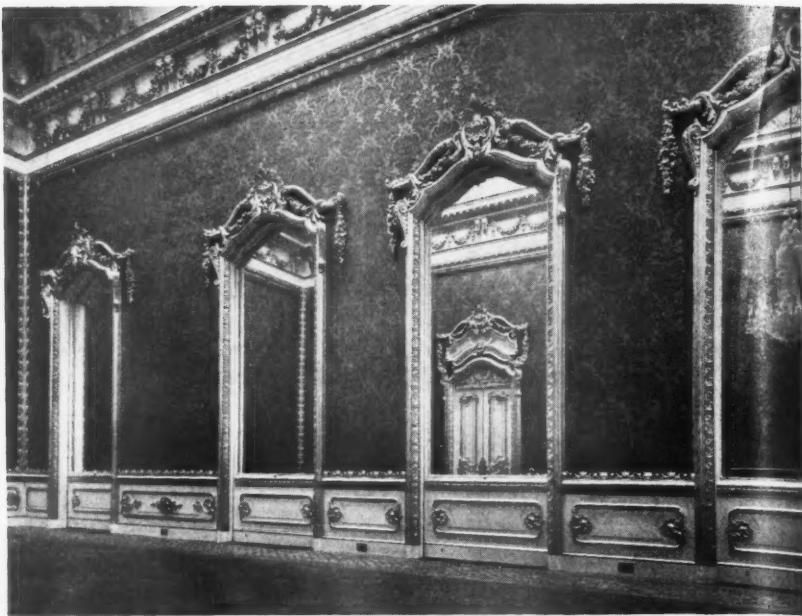
The ground floor. The rooms not named are for the private use of the Wellington family



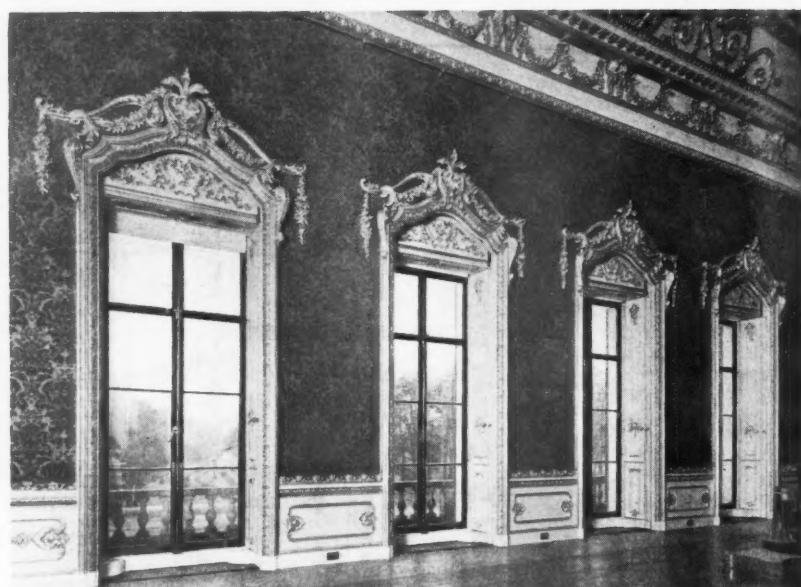
The dining-room corridor first floor



The Piccadilly drawing-room



The door from Waterloo gallery to yellow drawing-room



The Waterloo gallery. Above, showing the sliding shutters closed, and below, showing the shutters open

before any decoration could be done. Robert Adam's original designs for the colour scheme of this ceiling are in the Soane Museum, and these have been faithfully copied. The walls have been relined with silk damask of a design similar to the original.

In this and other rooms the original gilded surfaces had deteriorated badly, but as the regilding of every part would have involved the use of over 100,000 leaves of gold leaf the cost seemed hardly excusable, so new gilding has been confined to the parts most badly worn, and by toning down the new surfaces a general appearance of uniformity has been attained.

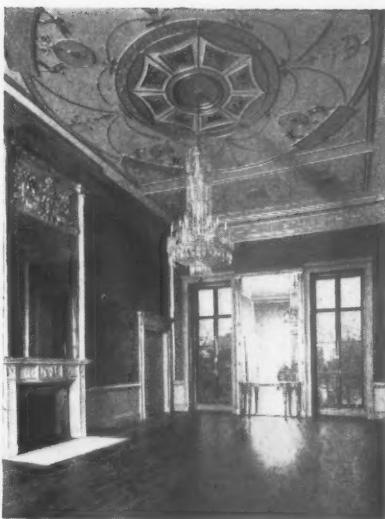
The walls of the striped drawing-room

have been lined with new silk damask, but in the yellow drawing-room a yellow-figured paper has been hung in place of the original yellow damask from which the room takes its name. The dining-room presented a more difficult problem, as the pilasters and fireplace surround were in scagliola and had been damaged, but an Italian specialist craftsman was called in, and he made a very good job of it. The room has been repainted in light peach to correspond with the original colour and surface.

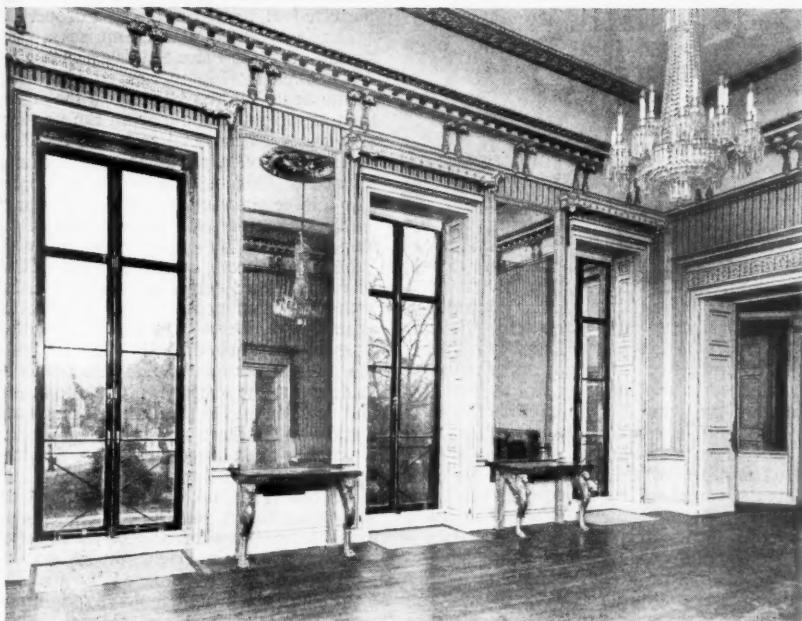
The most impressive room in the museum is the Waterloo gallery, which occupies the whole of the first floor of the western wing built in 1828-9, and takes its name from the annual banquets the Duke held until 1852 on 18 June in celebration of his victory at Waterloo. Previous to the building of this gallery the reunions had been held in the dining-room. The gallery is some 80 ft. long and 24 ft. wide, and has an enriched and partly glazed ceiling. The Duke had the walls hung with yellow damask, to the artistic horror of Mrs.



The portico room ceiling before restoration



The portico room, after restoration



The striped drawing-room

Arbuthnot, who said it was 'just the very worst colour he can have for pictures and will kill the effect of the gilding. However, he *will* have it.' The second Duke had the damask stripped and used for the yellow and striped drawing-rooms, replacing it in the gallery with red damask, of which the general character has now been reproduced in a dark red wallpaper. The inlaid floor margin has been restored.

The sliding panels at the windows are interesting features; they are lined on the room side with a repetition of the dado in

the remainder of the room and above the dado they are faced with mirrors.

The absence of exposed central heating radiators in the museum is particularly noticeable; these would have given an unwanted air of modernity, but that has been avoided by installing in the majority of rooms flush heating panels in the dadoes. In the dining-room the heating panels have been recessed behind the original oak panelling and faced with an oak veneer fixed with a heat-resisting adhesive. In the striped drawing-room the



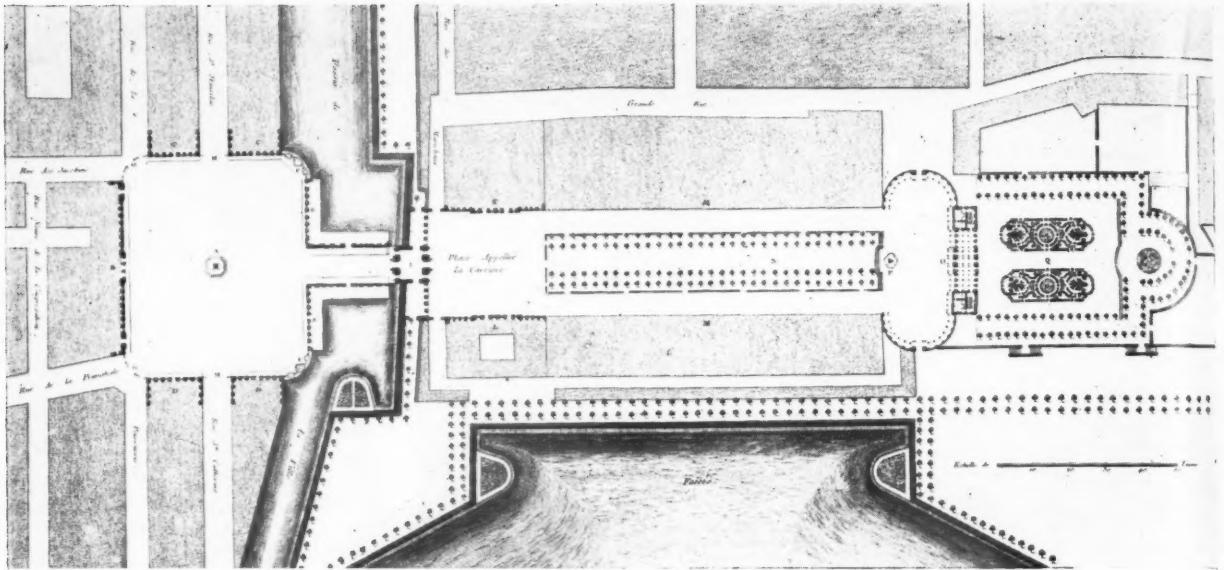
The Waterloo gallery

presence of the banquets round all the walls made it impossible to use heating panels in the dadoes, and so they have been recessed in the floor, adjacent to the three French windows, and finished with panels of Ancaster stone.

External work to Apsley House includes the usual repairs of a maintenance character, stone restoration and cleaning. The old glass covered way at the main entrance has been removed and the forecourt paving repaired. The total cost of the work, excluding furnishings, was £50,000.

The work was carried out under the general direction of Mr. M. C. Glover, M.C. [L] of the Ministry of Works Maintenance Division.

The Wellington Museum was opened to the public on 19 July.



Héré's plan of the three linked *places* at Nancy. From Patte's *Monumens Erigés en France* (1765)

The Great Square at Nancy

By Katharine Chorley

IN 1734 Stanislas Leszczynski, king of Poland and father-in-law of Louis XVth of France, fled from Danzig disguised as a peasant two days before the Russian armies which were prising him out of his kingdom marched in. His French father-in-law compensated him for the loss of his kingdom by turning over to him the Duchy of Lorraine.

Stanislas established his modest court at Lunéville but made his capital at Nancy. The little court became a centre of 18th century 'enlightenment' on its aesthetic side, and Nancy, the capital, raw material for a town planner's paradise. For Stanislas was weary of the adventurous life, during which he had twice been brought to the elective throne of Poland only to be shouldered out by the pressures of the international political game. He was ready enough to settle down in his Duchy, leave its administration to a French Governor supplied by his father-in-law (whose pensioner in effect he was) and devote his energies and considerable talent for 'aesthetic management' to the reconstruction and adornment of his capital.

Politically his hands were pretty well tied by the French, but artistically he was free, and there is good ground for believing that the French Government added large sums to his allowance to enable him to pursue his plans.

At Nancy there was a unique opportunity for town planning. The city was divided into a new and an old town with between them a great space partly built over, partly derelict and partly taken up with obsolete fortifications. Stanislas's

initial idea was to use part of this space for a square of a size and dignity suitable to frame at its centre a splendid statue of his father-in-law. But in the hands of his architect, Emmanuel Héré, a brilliant designer in metal-work, Jean Lamour, and a group of talented sculptors, the scheme grew far beyond this original conception. Buildings were ruthlessly razed, the raw edges of the existing old and new towns were masked or tidied up, and the whole area used to provide room not for one fine square only but for three linked *places* whose noble elegance is unsurpassed in 18th century design.

The work of this remarkable team of artists, captained by Héré, who was himself a native of Nancy and who had never worked and scarcely travelled outside Lorraine, remains today almost completely unharmed by the rough handling of later developers or the vicissitudes of war and politics; and not as a museum piece but as a vital centre to the life of an energetic modern city. Only the statue of Louis XVth, broken up at the Revolution, has given place to a somewhat clumsy statue of Stanislas himself. Since Nancy or Metz are obvious stopping places for English motorists who cross to Dunkirk en route for Switzerland or South Eastern France, it seems strange that Héré's work is so little spoken of in this country outside the more serious books on architecture. Probably the passing motorists are more aware of Metz, with its tall Gothic cathedral and its dramatic memories of 1870 and 1914-18, and so they miss one of the loveliest and

in some ways perhaps the most highly perfected of town centres in Europe.

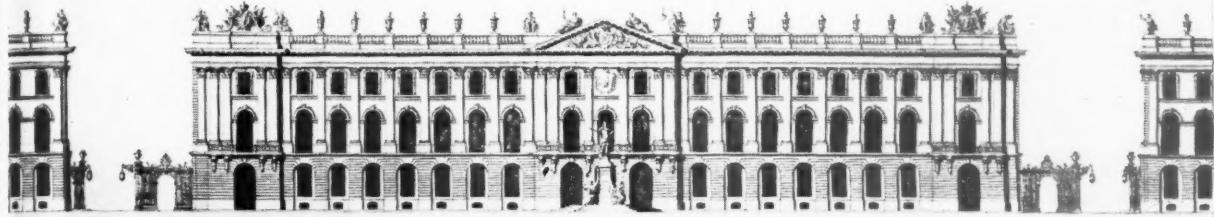
Héré's executed plan comprises a great square, now the Place Stanislas, measuring 124 metres by 106 metres, and with the statue as its centre. Aligned on the statue, a short street leads out from the northern side under a triumphal arch into the Place de la Carrière, a rectangle 293 metres by 56 metres. This long *place* in its turn opens into a large graceful oval, closed but for its entrance and an exit at each end of the ellipse.

The architect conceived the Place Stanislas as an enclosed quadrangle, but since his basic problem was to link the square organically with the existing sections of town around it, in effect he broke the sides of the quadrangle into blocks by leading out fine streets as arteries to the old and new towns. On the shorter eastern and western sides there are twin blocks, each separated by a street exit. On the long southern side, the splendid façade of the Hôtel de Ville takes the length of the square unbroken, but the corners are cunningly lopped to allow at each the outgoing of two streets, at right angles to one another and partly screened by grilles of Lamour's black and gold wrought-iron work. On the northern side the short street leading to the triumphal arch breaks the long uniform façade which, by an inspiration of genius, Héré built a storey lower than those on the other three sides; thus letting in a flood of light and suggesting the taller façade of the Hôtel de Ville opposite as his climax. On this side, too, the corners are sliced off and the sides of the square are joined by Lamour's grilles, which frame two great fountains with lead mythological figures by Guibal. Behind the ironwork there is a profusion of greenery.

Thus the whole effect of the square, with its symmetrical street openings, its



Elevation of one side of the Place Royale showing the triumphal arch. From Patte's *Monumens Erigés en France*

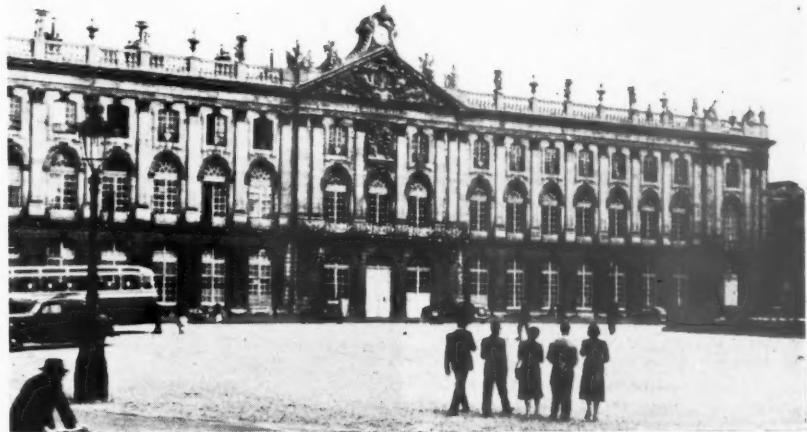


Above, the Hôtel de Ville side of the Place Royale. Below, the Hôtel de Ville today

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The façade of the Hôtel de Ville is three storeyed. The two lower storeys have tall semi-circular arched windows, those on the ground floor reaching almost to the pavement and giving a pleasant effect of French windows. The third storey windows are flat-arched. All have carved keystones, and the centre row has delicate pilasters, with mouldings running round the arches. The two upper storeys are linked by tall Corinthian pilasters rising between each window to architrave and cornice, and the design is finished by a balustrade surmounted by urns, sculptured groups and stone baskets of fruit and flowers set at the interval of each pilaster. Above the three central windows the line of the balustrade is broken by a pediment richly sculptured with the Polish eagles and Stanislas's arms. Balustrade and sculptures run all round the four sides of the square, glowing a dim golden grey against the blue of sky. Together with Lamour's balconies and bracketed lamps, which also ring the square except on the lower northern façade, they enhance the sense of unity and provide a remarkable combination of dignity and lively grace.

Perhaps this last quality is mainly due to Lamour. Trained as a locksmith—it was his father's craft at Nancy—he found an opportunity for the full flowering of his genius when he entered Héré's team as a designer and worker in wrought iron. It is said that Stanislas himself visited his workshop in a disused church and was enthralled by the work he saw in progress.



His balconies and lamp brackets are seen to best advantage on the façade of the Hôtel de Ville. The three central windows of the second storey give on to a single sumptuous balcony; on either side, each window of the long façade has its own balcony. Between the ground floor windows, the brackets with the bold dependent lamps reach out from the wall with an elegant swagger. The whole effect is one of sheer enchantment; black and gold, writhing twists of metal, scrolls and leaf motifs held in balance by thin black upright or horizontal rails. It would seem that such an art could be carried no further; yet at the two corners of the northern side of the square Lamour's imagination swept, with an increasing élan of fantasy, into a creation of grilles and arches and golden trophies lightly framing the two fountains with Guibal's grandiose lead figures, and

gleaming against the background of green leafage.

Such an imagination, coupled with so much virtuosity, could have tempted Lamour far beyond the control necessary to harmonise with the sober proportions and gracious dignity of Héré's elevations. He never loses this control; his glittering magical designs are always just subordinate to the architectural conception, fulfilling the purpose assigned to them of drawing out, as has been suggested, a quality of lyrical grace. It is perhaps most to Héré's credit as captain of the team that he could inspire his most brilliant and wayward player with this degree of artistic loyalty.

Before leaving the great square for the Place de la Carrière, the visitor should see the interior of the Hôtel de Ville, if only to walk up the staircase designed by Joly de St. Nicholas. Bowed shallow treads fan



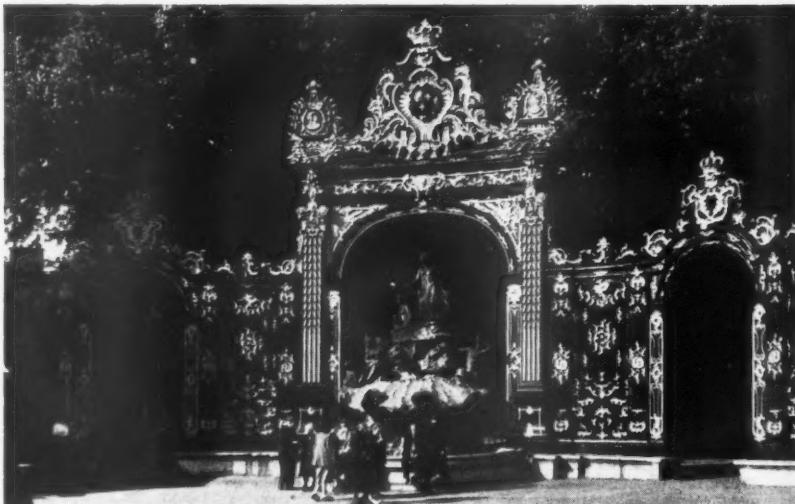
The Grand Hôtel on the east side of the square



One of the lamps on the Hôtel de Ville

out and then divide as they rise into parting arms, which curve round to meet again at landing level. The balustrades of wrought iron, with the severe handrails, curly loops and gilded foliage, are of course by Lamour. And he may have regarded them as the summit of his technical achievement, since he wrote that only those who knew the craft could properly appreciate the technical difficulties presented by the contours he had to follow. The stair leads to a fine saloon with frescoes by Girardet, who was Stanislas's court painter and had, so it is said, among his other chores the duty of correcting the compositions with which his royal master somewhat maladroitly adorned his books of piety.

The triumphal arch through which the short Rue Héré leads into the Place de la Carrière is a baroque adaptation of the arch of Septimus Severus. Its solidity and strong proportions, its heroic ornamentation, emphasise by contrast the graciousness of the great square. It was bold thinking on Héré's part to introduce this sudden change of key, but he knew what he was doing. The effect is at first rather roughly surprising, but then stimulating. Beyond, the long Place de la Carrière opens out, the flanking buildings uniform but simpler in design than those of the great



The Fontaine Amphitrite with Lamour's ironwork

square, the centre a broad gravel avenue banded by square-cut trees and with iron-work gateways. At either end of the avenue are sculptured groups of delightful cupids by Söntgen.

Walking down the place one sees a glimpse ahead of the alluring curve of a crescent. This reveals itself as a part of the hemicycle. Round the ellipse, Ionic columns carry the curved architrave and



Hemicycle with entrance to La Pépinière and Pavilion at the corner of the Place de la Carrière



Staircase of the Hôtel de Ville



South-east corner of square with Lamour's grilles

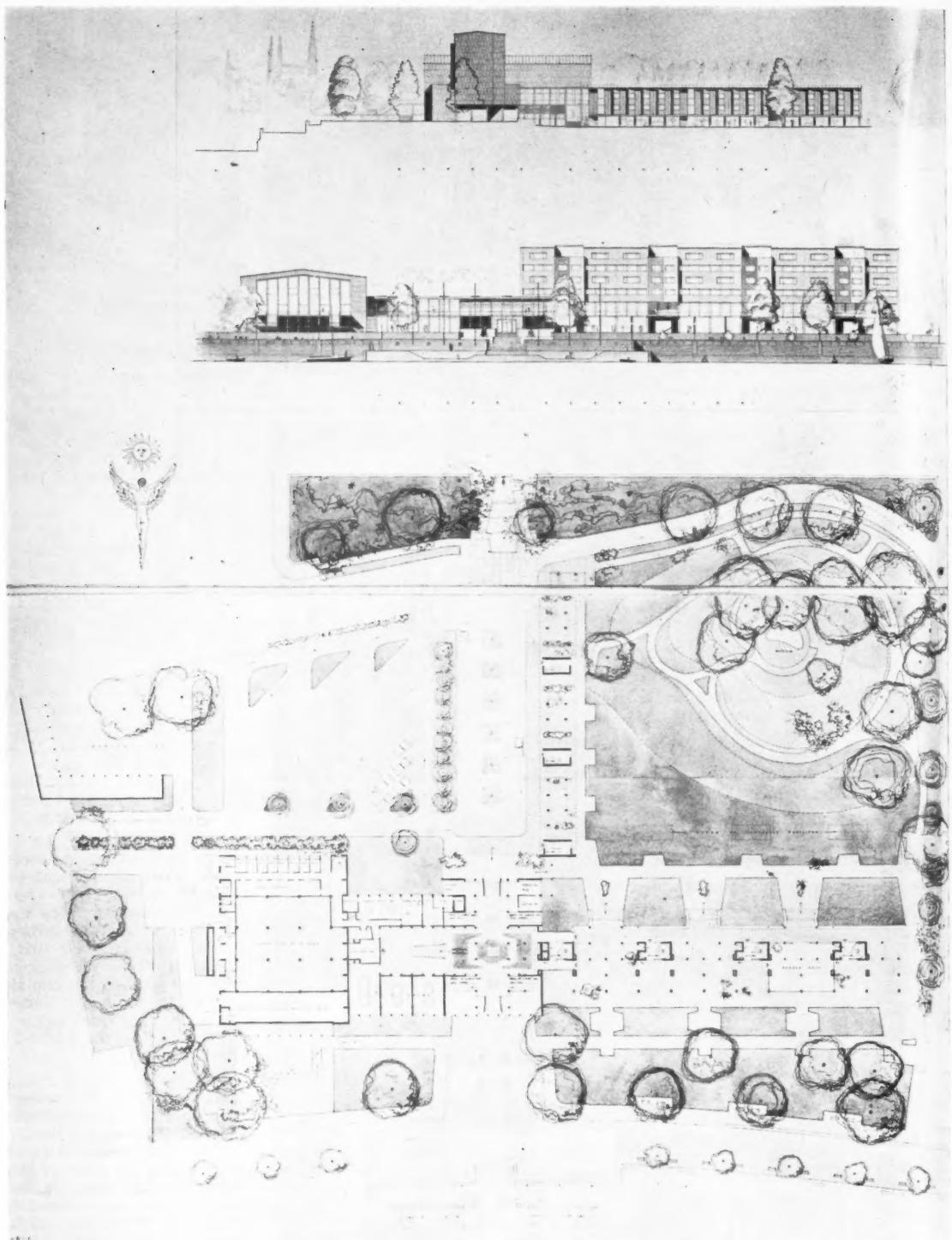


The Rue Héré. The photographs are the copyright of R. R. E. Chorley

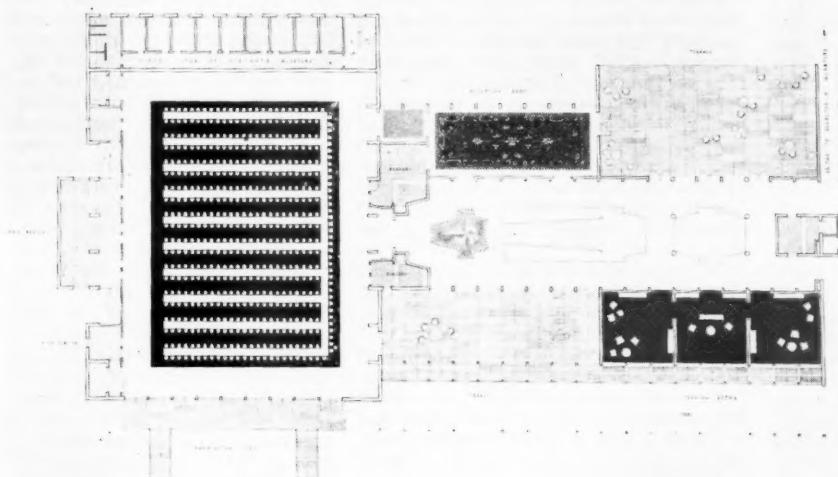
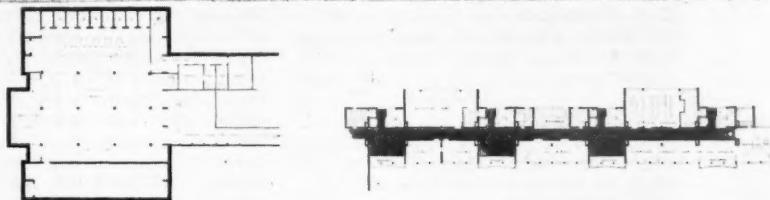
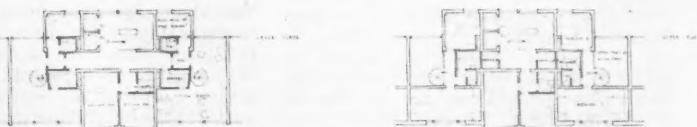
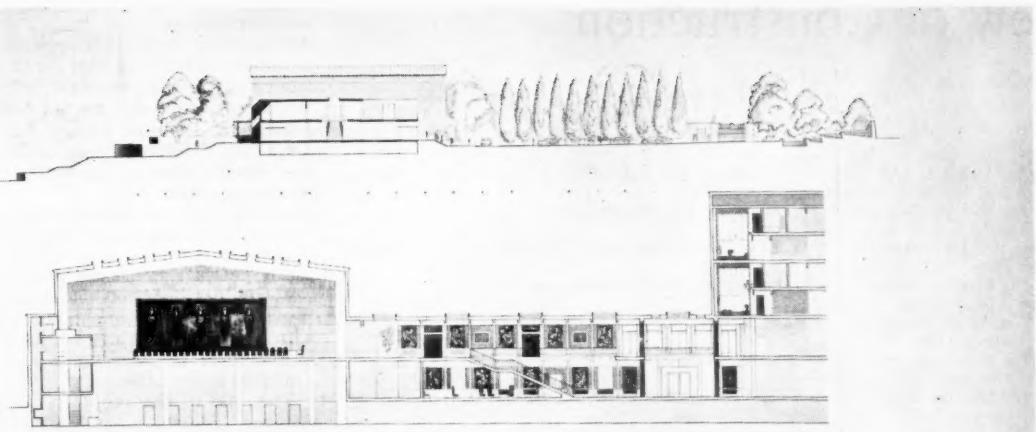
cornice finished by a balustrade and urns. Unbroken in line, they span the two openings at the east and west ends of the oval. Behind and between the columns there are niches, each with a bust on a pedestal. This invention joins the pavilions at the corners of the Place de la Carrière to the old Palais du Gouvernement at the centre of the further curve of the hemicycle. The palace is a noble three-storeyed building, with Ionic columns carrying a balustraded balcony for the first floor windows and giving place above to slim Corinthian pilasters. At the east end of the ellipse the trophied exit leads through into the lovely semi-formal gardens of La Pépinière, also a part of Stanislas's town plan. At the west end the second opening gives a vista through into the old streets, with a Gothic church but a few yards away and yet seeming utterly remote from this high-mannered urbane town centre promoted by Stanislas and created by Héré.

Whether Stanislas gave Héré a completely free hand, or to some extent suggested architectural ideas himself and criticised the plans, is not known. Nor does it very much matter. The important consideration is that he certainly provided general leadership. He was not content merely to finance his projects. Hence the men who worked for him had from beginning to finish the incentive of his intelligent appreciation and encouragement. He was in fact an essential member of Héré's team.

And Héré's work at Nancy is an outstanding example of successful teamwork. His craftsmen and artists were not asked to suppress their own artistic personalities, but they were expected to express themselves within the terms of Héré's unifying conception. He disciplined and controlled them and in a sense created through them. He had no marked originality of mind and followed fairly closely the general ideas of his predecessors and contemporaries. His success and his claim on our admiration rest mainly on the breadth and precision of his conception and on his capacity for vitalising it through the contributory work of others.



Rome Scholarship in Architecture, 1952. The subject set this year by the Faculty of Architecture of the British School at Rome was "Commonwealth House", a Government hospitality centre on a riverside site in a capital city, for use by official visitors and their staffs and important overseas delegations, as well as for conferences of Commonwealth ministers and official functions; the character and lay-out of the buildings to be welcoming, decorative and distinguished. Public



rooms, a private suite, and visitors' quarters to be provided. The Scholarship has been awarded to Mr. Duncan Ian Black, D.A.(Edin.) [4] whose four sheets of drawings are reproduced here. On page 372 the top sheet shows the garden and river elevations, and the bottom sheet the ground floor plan. On this page the top sheet shows sections and typical plans of suites. On the bottom sheet are plans of the kitchen, private suite, and the public rooms on the first floor.

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Review of Construction and Materials

This section gives technical and general information. The following bodies deal with specialised branches of research and will willingly answer inquiries.

The Director, The Building Research Station, Garston, near Watford, Herts.

Telephone: Garston 2246.

The Officer-in-charge, The Building Research Station Scottish Laboratory, Thorntonhall, near Glasgow.

Telephone: Busby 1171.

The Director, The Forest Products Research Laboratory, Princes Risborough, Bucks.

Telephone: Princes Risborough 101.

The Director, The British Standards Institution, 28 Victoria Street, Westminster, S.W.1.

Telephone: Abbey 3333.

The Director, The Building Centre, 26 Store Street, Tottenham Court Road, London, W.C.1.

Telephone: Museum 5400 (10 lines).

The Director, The Scottish Building Centre, 425-7 Sauchiehall Street, Glasgow, C.2.

Telephone: Douglas 0372.

Timber Leaflets. The timber leaflets issued by the Forest Products Research Laboratory will be of special interest to those who would be willing to use some of the lesser-known imported woods if they could learn their properties without much research. Six leaflets recently issued deal with agba, ramin, makoré, danta, dahoma, and three others which, in default of precise botanical identity, are described as probably brachystegia (boehmii and spiciformis) and isoberlinia.

The leaflets are commendably produced in a uniform manner, giving the tree, general description, seasoning properties, wood bending properties, mechanical properties, natural properties, and uses. Trade names are also given. The leaflets can be obtained, free, from the F.P.R.L., Princes Risborough, Bucks.

Economy of Building Materials. A report on this subject has been published as a result of investigations carried out, at the instance of the Government, into the building and works programmes of the main Government departments. The Government, local authorities and other public bodies spend some £700 million a year on building and civil engineering, and there was a prospect that considerable economies might be effected and that many of the findings might be applicable to the building industry generally. Sub-committees were formed to deal with special aspects of building operations, and the report has been prepared under the direct supervision, and over the signatures, of Sir Charles J. Mole, M.V.O., O.B.E. [F], Director-General of Works, Ministry of Works; Sir F. Arthur Whitaker, K.C.B., M.Eng., M.I.C.E., Civil Engineer in Chief, Admiralty; Mr. G. H. Fretwell, C.B., M.I.C.E., Director-General of Works, Air Ministry; and Major-General L. D. Grand, C.B., C.I.E., C.B.E., Director of Fortifications and Works, War Office.

The report is divided into six sections: (1) building; (2) heavy civil engineering; (3) maintenance; (4) airfields; (5) mechanical and electrical engineering; and (6) steel economy. Readers of the JOURNAL will be most concerned with the section on build-

ing, and although space does not permit a lengthy summary some of the recommendations are given below to indicate the general nature of the report, which is one that merits careful study because its influence will no doubt extend beyond the Service departments and the Ministry of Works, by whom it has been adopted as a code of practice mandatory in their Works Directorates. All other Government departments are being strongly urged to observe the recommendations.

Class of structure. Use skeleton construction where occupational requirements are likely to change rapidly. **Planning.** Keep area of circulating space to a minimum. Increase use of repetitive gridding. **Internal heights.** Relate heights to occupational needs. Ceiling heights for housing normally 7 ft. 6 in.; other buildings, 200 sq. ft., ceiling not more than 8 ft.; 200-1,000 sq. ft., 9 ft.; 1,000 sq. ft. upwards, 10 ft. **Excavations and foundations.** Avoid basements if possible; heating chamber can be half sunk. Mass concrete for foundations and basement floor slabs, instead of reinforced concrete. Asphalt tanking only where there is water pressure. For housing, normal depth of foundations 2 ft.; if required deeper, or in clay, consider short bored piles or strip foundations. Offset footings and separate foundations to partitions not necessary. Ground floor concrete slabs for houses and the like, 4 in.; membrane floor construction should be confined to wet sites.

Walls, partitions and windows. Cavity walls generally, clinker or hollow blocks for inner leaves. Damp-proof courses in slate or bituminous felt. Reduce size of concrete lintels by using brickwork reinforced with light expanded metal. Cement bedding to timber joists instead of wall plates. Avoid large areas of windows; omit sub-frames to windows; consider hardwood instead of purpose-made, and softwood for standard, steel windows.

Roofs. Prestressed concrete or hollow tile slabs for flat roofs. Consider asbestos cement, or reinforced wood-wool slabs, instead of steel decking. Omit, or reduce height of, parapets, but railing may be necessary. Gutters and downpipes for

housing and temporary works to be in asbestos cement.

Finishes. Fairface work if hygienic surfaces not essential. Make greater use of two-coat retarded hemi-hydrated plaster. Omit plaster to ceilings if walls are not plastered.

Fittings. In housing, picture rails to not more than two rooms; use standard doors, and latches instead of locks; consider plastic furniture.

Plumbing. Use one-pipe system more extensively; on housing and small buildings, if permitted, omit water storage; extend use of plastic water waste preventers.

More detailed recommendations are being prepared on cement, steel, electrical wiring and timber; these will be published in the form of memoranda and will be available in the autumn.

The title of the report is *Economy of Building Materials*, published for the Ministry of Works by H.M.S.O., price 2s. net. Code number 67-26.

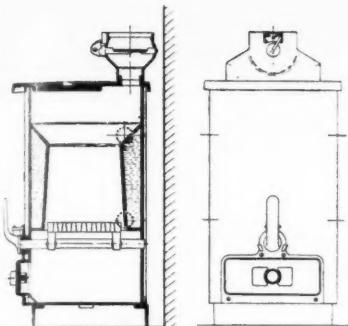
The Magic Eye. The more one reads of scientific discoveries, the more one realises that imaginative observation is at the root of them. We all 'observed' that the old electric light carbon lamps went black but it needed the imaginative insight and questioning of Edison, Fleming and others to make use of that observed phenomenon and from it to evolve the thermionic valve used in radio. Towards the end of last century the German scientist Hertz observed that if a highly-polished zinc plate was charged with negative electricity, the charge leaked away when the plate was exposed to ultra-violet rays. This became known as the photo-electric effect, and its practical application has been of benefit to industry. The first burglar alarm operated by the photo-electric cell intrigued the public, who called it the magic eye.

Since that time zinc has been displaced by other metals, which are sensitive to visible light radiations and convert them into electrical energy, which can be amplified. The uses to which such photo-electric cells may be put are many and are increasing; a few are briefly noted below.

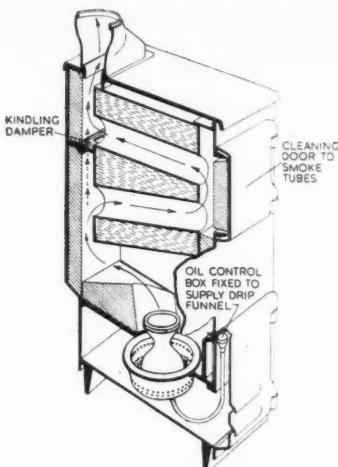
Oil Burner Control. The Satchwell 'Per' photo-electric flame failure device has been designed for use with semi-automatic and fully-automatic oil burners to ensure that the burner will be shut down if the flame is not properly established during starting, or if it should go out.

The box containing the photo-electric cell is mounted on the front plate of the boiler so that it can be focused on the flame. So long as sufficient light is emitted by the flame the cell allows the oil fuel to flow to the burners; if the light is not sufficient the cell operates through amplifier relays and the burners are shut down. In the case of an automatic oil burner a second start will be made automatically if the flame fails during a normal run, but if this second attempt fails to establish the flame the control circuit will be isolated and will need to be reset by hand.

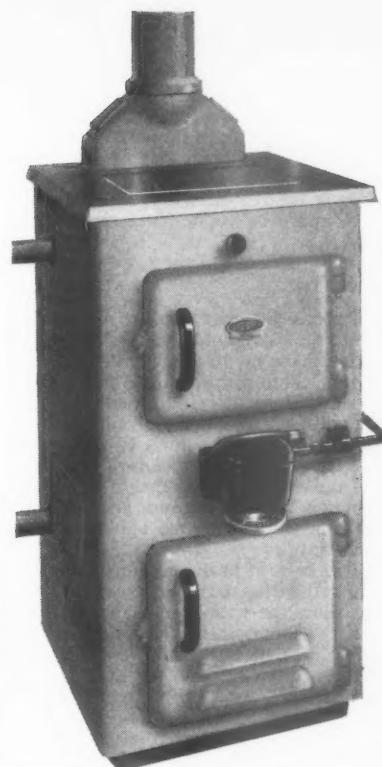
Although the operation of the device is almost instantaneous, a slight puff of smoke across the photo-electric cell will not cause



The Glow-worm B.33 boiler



Section through Glow-worm B.65 boiler



Glow-worm B.65 oil-fired boiler

the control circuit to be isolated; nevertheless, the makers stress that the lens of the cell must be kept clean, so that light from the flame is not obstructed. (The Rheostatic Co. Ltd., Slough, Bucks.)

Smoke Density Indicator. The emission of dense smoke from industrial chimneys where solid fuel is burnt shows that the fuel is being used inefficiently and that the atmosphere is being polluted by gases and solid particles; in fact, it is estimated that some 2,000,000 tons of soot are deposited annually throughout the country, with consequent damage. It is therefore necessary that there should be some means of noting the smoke density and—by implication—the fuel efficiency, and for this purpose something more constantly reliable than the human element is needed.

It is desirable that any detecting apparatus should do three things: (a) give an alarm when the smoke passing up the chimney exceeds the pre-determined opacity; (b) give an indication of the opacity at any particular moment; and (c) provide a continuous record of the opacity. The photo-electric cell is a means of fulfilling these three requirements. The light-projector is placed against an opening in the wall of the chimney, the receiving cell is mounted directly opposite and operates a control unit incorporating an alarm, recorder or indicator. The projector and receiver must be able to withstand a temperature as high as 125 degrees F. without deterioration.

The principle can, of course, be also applied to oil-fired boilers, and its possibilities as a fire alarm are obvious. (Inquiries to Messrs. Andrew Jardine and Co., 13 Lonsdale Road, Chiswick, London, W.4.)

Collapsible Gate. The Bolton Gate Co. Ltd. have improved their collapsible gate, operated by a photo-electric cell, mounted in a standard in front of the gates and opposite a light source similarly mounted. Obscuration of the light rays causes the cell to set an electric motor in action, and the gate opens. After a pre-determined time lag, it closes. If, say, a man with a truck does not get through the gate in time, its closing can be stopped by pressing a lever on the front edge of the gate. In an emergency, the electrical gear can be put out of action, and the gate can be operated by

hand. Similar control can be made to open a door. (The Bolton Gate Co. Ltd., Waterloo Street, Bolton.)

Glow-Worm Appliances. The simplicity in operation of oil-fired boilers lends interest to the Glow-worm B.65 independent oil-fired hot water boiler, which will function on gas oil, diesel oil or paraffin, and does not require electrically-driven apparatus. The casing is cast iron and the waterways are steel. As will be seen from the accompanying sectional illustration the hot gases normally pass spirally round the waterways, but there is a kindling damper which can be opened to let the gases pass straight up to the flue outlet. Special attention has been given to insulation of the boiler.

The specification states that the boiler will give a hot water supply of 130 gallons an hour at temperatures of 50-100 degrees F., or 65 gallons at 50-150 degrees F. The height of the boiler is 35 in. and the base is 18½ in. by 17½ in.

Another Glow-worm product is the B.33 boiler for solid fuel. The makers do not provide fire doors, because they tend to warp after a time and thus allow cold air to pass, with loss in efficiency. The waterway encircles the fire, as the makers consider this gives a higher output per sq. ft. of heating surface than the U-shaped boiler. The accompanying illustrations show a handle in the front; this works the shaker for agitating the fire and clearing the ash. The boiler is made with a cavity between the water jacket and the casing to reduce the likelihood of over-heating an average-sized kitchen in the summer. Recommended fuels are gas coke, 1-½ in., anthracite 1-½ in., or suitable manufactured boiler fuels. The hot water supply is 66 gallons per hour at temperatures 50-100 degrees F. or 33 gallons at 50-150 degrees F.

Glow-worm appliances are made by Messrs. Glow-worm Boilers, Ltd., Derwent Foundry, Milford, near Derby.

Morgan M.R.I. Firebrick. The Morgan Crucible Co. Ltd., of Battersea Church Road, London, S.W.11, have introduced a type of

firebrick not hitherto produced in this country, although they are being used in America. The company claim that the new refractory has a greater factor of safety at high temperatures, gives longer life, and reduces maintenance costs. In support of this claim the following notes are given: softening under load of 25 lb. per sq. in. does not begin until 1600-1650 degrees C. (2912-3002 degrees F.), 10 per cent subsidence taking place at 1750 degrees C. (3182 degrees F.); the chemical composition and physical make-up ensure a strong resistance to slag attack, and resistance to thermal shock is of a high order. The density is 135 lb. per cu. ft. Size of brick, 9 in. by 4½ in. by 3 in. The company stress that M.R.I. firebricks must be jointed with the correct cement, and they will give recommendations for particular applications.

The Yorkvale Cooker. This heat-retention cooker is free-standing and is fitted with a high-pressure boiler. A hot water storage cylinder of 30-gall. capacity is recommended. Cooking is provided by a main oven of nearly 2 cu. ft. capacity, and a warming oven of just over half cu. ft. The oven can be maintained at the desired temperature by adjusting the spinwheel on the ashpit door, and an indicator on the main oven door shows what is the heat within. A surface machined hotplate extends over practically the full width of the cooker. Insulation is provided by slag-wool packed in the free space within the

cooker; the fire and oven doors are also insulated.

The fuel consumption is about $1\frac{1}{2}$ to 2 cwt. per week, and the cooker will function on coke, coal, anthracite and manufactured fuels, of the recommended sizes. Dimensions are: width 32 in., height 30 in., and depth $17\frac{1}{2}$ in. The present price, without extras, is £42 4s. The Yorkvale cooker is on the Ministry of Fuel and Power's approved list, and is recommended to local authorities. It is a product of Messrs. Radiation, Ltd., of Stratford Place, London, W.1.

The Sunbeam Superior Cooker. A new addition to the list of cookers is the Sunbeam Superior, made by Messrs. Chatwins, Ltd., of Tipton, Staffordshire. It is a free-standing, heavily-insulated solid fuel cooker, which will also heat a towel rail and one or two radiators in addition to supplying hot water. The oven is warmed by convected and radiant heat to ensure even heat distribution within the oven, and no flue cleaning is required as the appliance has no internal flues.

As will be seen in the accompanying illustration there is a secondary oven (bottom right) below the main oven, and each is fitted with a thermometer. The hotplate has a boiling area of 180 sq. in., and has an accelerator for giving quick service after the night's banking. As a surface temperature of 1000 degrees F. can be attained on the hotplate the conserving cover has had to be made in heavily-insulated cast iron, but although it weighs 30 lb., spring loading enables it to be raised easily.

The firebox capacity gives continuous burning for some ten hours without attention, and a patented transverse-rake bottom-grate clears the dead ash, and also allows the whole fire to be dropped into the ashpan if for any reason the fire has to be put out. Boiler connections can be at the back or side, and the flue outlet at the back or top. The hob is finished in green or black acid-resisting vitreous enamel and, if specified, the inside of the main oven can be grey vitreous enamel. All external corners are rounded, and the drop doors have concealed hinges.

Fuel consumption is from $1\frac{1}{2}$ to 2 cwt. a week, and may be coke, coal, anthracite, or some of the patent fuels. The cooker has been accepted by the Council of Industrial Design for inclusion in Design Review 1952.

Hydrophobic cement. Russia has been developing a modified Portland cement made by grinding the clinker with the addition of a special water-repellent mixture. This mixture helps the grinding and a finer cement can be obtained; it also forms a water-repellent, or hydrophobic, film round each grain of cement, and thus reduces the rate of deterioration during storage. But this film appears to be broken up when the cement is mixed with sand and gravel in making mortar or concrete, so the cement can be used in the normal way.

During the mixing stage the added mixture is said to plasticise the mix without excessive air-entrainment, and so permits



The Sunbeam Superior cooker

the mixing water ratios to be reduced. In conjunction with the finer grinding this gives higher-strength concrete; alternatively, for a fixed strength a lower cement content can be used. The mixture remains in the finished mortar or concrete, and the resulting concrete shows reduced permeability and water absorption.

Tests made in this country, using oleic acid as the addition, gave promising results, and showed that the difficulties of mixing the hydrophobic cement with water disappear in a cement-sand mix. The effect was so marked that it suggested the mechanical breakdown of the films through rubbing of sand particles may not be the only reason, and further research is needed on this point as it may affect the choice of aggregate.

If extended tests show that the water-repellent film formed round the cement grains does reduce the rate of deterioration of the cement during storage, without any ill effects in other directions, it should be a valuable technique.

British Standards recently published

B.S.1878 : 1952. **Corrugated copper jointing strip for expansion joints.** Contents: specification for sheet copper corrugated jointing strips for use in expansion joints in buildings to accommodate relative movement between the two sides of the joint, or to break rigid continuity in structures for sound insulation. It is not intended for use in large water-retaining structures, or with slabs taking wheeled traffic. Three thicknesses with four depths of corrugations. Obtainable from the British Standards Institution, price 2s. net, post free.

B.S. 1876 : 1952. **Automatic flushing cisterns for urinals.** Contents: definition of

minimum performance requirements for automatic flushing cisterns where supply of water is at a fixed rate. Obtainable from the British Standards Institution, price 2s. net, post free.

B.S. 1297 : 1952. **Grading and sizing of softwood flooring.** Contents: minimum requirements for tongued and grooved boards, and plain-edged boards, laid on joists, fillets or on existing floors, in Canadian spruce, Douglas fir, redwood, whitewood, pitch pine, and Western hemlock. Permissible checks and shakes, cupping, knots and wane. Dimensions of boards. Diagrams of knots. Obtainable from the British Standards Institution, price 2s. net, post free.

B.S. 1860 : 1952. **Structural softwood. Measurement of characteristics affecting strength.** (Superseding B.S.940, Parts 1 and 2, and B.S. 1175.) Contents: provision of standard methods of assessing the measurable characteristics and moisture content of softwoods for the purpose of computing the strength of individual members; definitions and nomenclature, tolerances; shakes, splits and checks; slope of grain; knots. Nominal sizes. Obtainable from the British Standards Institution, price 2s. 6d. net, post free.

Codes of Practice recently published
C.P.402 : 101 (1952). **Hydrant systems.** Contents: installation of hydrant systems in building or within their site boundaries. List of relevant Codes and British Standards. Details of components. Design considerations. Inspection, testing and maintenance. Obtainable from the British Standards Institution, price 2s. net, post free.

C.P.402 : 201 (1952). **Sprinkler systems.** Contents: definitions; list of relevant British Standards. Design considerations. Inspection, testing and maintenance. Reference to the Fire Offices' Committees' rules for automatic sprinklers. The dry-pipe and the wet-pipe systems. Obtainable from the British Standards Institution, price 2s. net, post free.

C.P.305 (1952). **Sanitary appliances.** Contents: selection and installation of sanitary appliances. Definitions. List of relevant British Standards. Types of appliances. Provision and installation in houses, flats, shops, schools, hospitals, places of public assembly, swimming baths, factories, catering kitchens, and offices. Inspection, testing, and maintenance. Obtainable from the British Standards Institution, price 3s. net, post free.

C.P.327 : 401 (1952). **Bell and call systems.** This Code forms part of the series dealing with telecommunication services in the group of Codes on electrical installations in and about buildings. Contents: installation of bell and indicator call systems, including time bells, for private dwellings, hotels, schools, and factories. Burglar alarms and watchmen's supervisory services. List of relevant Codes and British Standards. Design considerations; structural accommodation and ducts. Inspection, testing and maintenance. Obtainable from the British Standards Institution, price 3s. net, post free.

The Selection of Suitable Chalkboard Colours

By R. G. Hopkinson,
B.Sc., Ph.D., M.I.E.E.

Building Research Station

THE USE of the chalkboard is still a standard method of instruction in English schools, and is likely to remain so in spite of the increase in the use of film strips and other visual aids. The use of white chalk on the blackboard has not been supplanted, although a number of researchers from the psychological laboratories have advocated the use of chalkboards of various colours together with chalks of complementary colours.

A detailed study of lighting and vision in schools was made by the Building Research Station a few years ago (*Studies of Lighting and Vision in Schools*, R. G. Hopkinson, *Transactions of the Illuminating Engineering Society*, 1949). The chalkboard problem was included in this study. There did not seem to be any evidence, from a detailed study of the literature, that the use of coloured chalks on coloured chalkboards would show any real advantage over the use of the traditional materials. But the increasing use of colour in classrooms as an essential feature of the design did lead to the conclusion that serious consideration should be given to the use of white chalk with coloured chalkboards, the colour of the chalkboard being an integral part of the colour treatment in the classroom.

Contrary to generally accepted belief, the blackness of a blackboard is not a very important factor. Provided the teacher uses good solid white chalk letters, the reflection factor of the blackboard can be quite high (up to 25 per cent). In fact the best value is a dark grey (reflection factor about 15 per cent) rather than a deep black. With a dark grey board vision is good, and comfort is much better than with a deep black, but 25 per cent reflection factor (a medium grey) is the lightest that should be used. This assumes that the board is well lighted, receiving at least 10 lumens per sq. ft. (foot candles).

If brightness contrast alone determined visual ability and visual comfort in reading from a chalkboard, a very considerable freedom in the choice of colour of the chalkboard would be possible. Unfortunately there are 'clashes' between the white letters and the coloured backgrounds when the reflection factor of the background is as high as 25 per cent, which do

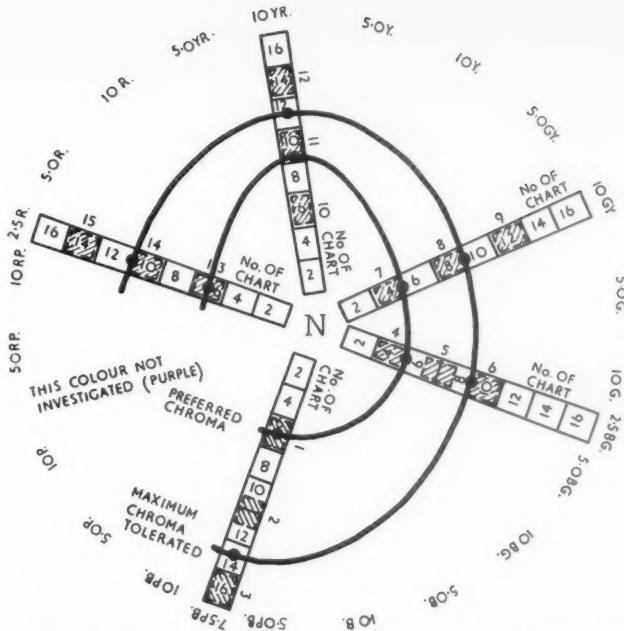


Fig. 1: Horizontal sections of the Munsell solid at value 5 ($p=25\%$) showing positions of the 15 selected experimental chart hues and chromas, and loci of preferred and maximum chromas chosen by the 20 observers. Munsell hues are written round a circle of high chroma. In the diagram chroma numbers are written in the colour sample rectangles; selected chart hues being cross-hatched within broken lines, with the chart numbers written alongside. Circles represent position of average amount of chroma considered preferable or maximum permissible by the observers. The points obtained from the averages have been joined to illustrate the loci of 'good' and 'just acceptable' round the colour circle

not occur with the grey background. The precise physiological reason for these clashes need not concern us at the moment, but they do mean that very great care is necessary in the choice of coloured backgrounds of these higher reflection factors; otherwise it would be far better to avoid the use of coloured chalkboards and to play for safety with the traditional grey or black board.

Some time ago the Building Research Station conducted a survey on preferences of the colours of chalkboards. It was the psycho-physics of the problem which was considered, not the aesthetics.

Fifteen small chalkboards with identical white printed sentences on each were used as test charts. Their background colours comprised five different hues with three different degrees of colourfulness, and all fifteen charts had approximately the same lightness. These charts were displayed on a uniformly well-lighted wall (with the daylight illumination of the order of 30 lumens per sq. ft.) of a neutral buff shade (Munsell 2.5Y 8/3). These charts were displayed both in a random sequence and also arranged in groups of the same colour. Twenty observers were asked to place them in order of preference from the point of view of the presence or absence of 'dazzle' or colour 'clash'.

The mechanics and statistics of the experiment need not concern us here. But the results gave a fairly clear-cut indication and this is illustrated in Fig. 1. This illus-

tration will be immediately self-explanatory to those who are familiar with the Munsell system of colour nomenclature, but a colour illustration would be necessary to explain it to those who are not. (A major limitation on the description of colour experiments is the absence of a universally understood system of colour nomenclature.)

Very briefly, the results suggested the following rules: (a) Highly colourful chalkboards must be avoided, otherwise serious 'dazzle' will result. (b) The maximum tolerable degree of colourfulness is about half-way between neutral grey and the maximum colourfulness which is possible. (c) The preferred degree is about half-way between neutral grey and the maximum tolerable colourfulness, that is, one-quarter the maximum possible colourfulness. (d) One is much more likely to overstep the mark using colours in the red, orange, yellow and greenish-yellow ranges than in the green or blue ranges. (e) Within these limitations chalkboards of a colour sufficiently positive to provide a natural focus of attention can easily be selected. But care must be taken. Familiarity with the Munsell colour system is essential to enable a proper interpretation of Fig. 1.

This note is published by the permission of the Director of Building Research. The experimental work was undertaken by Dr. M. Gilbert, then of the B.R.S., and now of the B.B.C.'s Engineering Research Department.

Practice Notes

Edited by Charles Woodward [A]

IN PARLIAMENT. Preservation of Historic Houses. In the House of Lords on 2 July the following question was asked: *Lord Chorley:* My Lords, I beg to ask the Question which stands in my name on the Order Paper. To ask Her Majesty's Government whether they are now in a position to take action for the preservation of the houses of outstanding historic and architectural interest which were the subject of a Report in 1950. *The Earl of Munster:* My Lords, Her Majesty's Government fully appreciate the need for action to preserve houses of outstanding historic and architectural interest, but in present circumstances the financial resources which can be allocated for this purpose must inevitably be very limited. Her Majesty's Government are, however, giving careful consideration to the question of how best the help which might be available can be made effective. *Lord Chorley:* My Lords, while thanking the noble Earl for his answer—which I do as a matter of courtesy, because it is a most unsatisfactory answer—I should like to ask him whether he realises that it will cause anxiety and distress to members in all parts of your Lordships' House, and among all those people in the country who are concerned about the safety of one of the greatest contributions which our people have ever made to world culture. I should like the noble Earl to say whether he is aware that when the National Trust—who probably know more about this subject than does any other institution—gave evidence before the Gowers Committee, they prepared a list of between 300 and 400 houses of outstanding importance—a much smaller, but more important list than that of 2,000 which appears in the Gowers Report itself—and that during the interval up to the end of last year no fewer than forty of these houses, representing 10 per cent, have disappeared. Does not the noble Earl think that this is a most serious situation? I should like to ask the Government whether, in view of the great importance of this matter, and the unsatisfactory character of the answer which has been given, they will be prepared to afford facilities for a fuller discussion of this problem. *The Earl of Munster:* My Lords, I do not think there will be a great deal of difference between us in regard to the remarks which have fallen from the noble Lord, other than that the financial implications are all-important. If the noble Lord requires a debate, no doubt he will make arrangements through the usual channels.

In the House of Commons a similar question was asked of the Chancellor of the Exchequer, who replied: Her Majesty's Government fully appreciate the need for action to preserve houses of outstanding historic and architectural interest. In present circumstances the financial resources which can be allocated for this

purpose must be very limited, but the Government are carefully considering how best they can be employed. (10 July 1952.)

The Member asking the Question gave notice that in view of the vague nature of the Reply he would raise the matter on the Adjournment.

Historic Buildings (Investigators). Asked how many of the investigators who are compiling lists of buildings of special architectural or historic interest, in accordance with Section 30 of the Town and Country Planning Act 1947, have been dismissed since February 1950 as a result of staff cuts; how many investigators are at present engaged in the work; and how many of them are employed on half time, the Minister of Housing and Local Government replied: The answer to the first part of the Question is eight full time and seven part time investigators. Fourteen full time and two part time investigators are at present engaged on the work, and the services of a few voluntary investigators are also available. (11 July 1952.)

Historic Buildings (Demolitions). Asked if he would publish in the Official Report a list showing how many buildings listed at any time as of special architectural or historic interest under Section 30 of the Town and Country Planning Act 1947 have now been demolished or are derelict or about to be demolished, the Minister of Housing and Local Government replied: I am circulating in the Official Report information about demolition. I am afraid that I do not know how many of the 32,000 buildings so far listed might be described as derelict.

Following is the list: Known to have been demolished, 7 (and part of an eighth); known to be in process of demolition, 2; Intention to demolish known and not challenged: (a) but information not available whether demolition carried out, 42; (b) but known to be still standing, 6. (21 July 1952.)

Housing. Coal Industry Housing Association. Asked what are the financial arrangements between the Government, the Miners' National Housing Association and the National Coal Board when the Housing Association builds houses for miners, the Parliamentary Secretary to the Ministry of Housing and Local Government replied: The object of the Coal Industry Housing Association, to which my right hon. Friend assumes the hon. Member refers, is to build houses under arrangements made with a local authority under Section 94 of the Housing Act 1936. Exchequer subsidy will be payable to the local authority in the same way as if the houses had been provided by the local authority, and the authority will pay an annual grant to the Housing Association of an amount not less than the exchequer subsidy. The Housing Association has been set up by the National Coal Board and will be financed by them. (22 July 1952.)

MINISTRY OF HOUSING AND LOCAL GOVERNMENT. Economies in Local Government Services. Circular 54/52, dated

27 June, addressed to County, Urban District and Rural District Councils and statutory undertakers emphasises the need for economy in respect of water supply, sewerage and sewage disposal, private street works, coast protection and miscellaneous services.

The Appendix to the Circular sets out the priority to be given to schemes submitted for authorisation, and in connection with private street works the Minister realises the inconvenience and hardship which residents undergo in many private streets which have remained unmade since before the war and are deteriorating. Some further curtailment of expenditure on private street works is nevertheless unavoidable in present circumstances and it will not be possible to continue the arrangement made last year whereby certain local authorities were notified in advance of the sums available for their areas. For the present the Minister will be able to approve proposals only in individual cases where conditions are exceptionally bad and the need for works is abnormally urgent.

In submitting proposals in such cases the local authority should forward a report by a technical officer on the state of the street, accompanied by photographs if available, so that the Minister can fairly assess the urgency of the work as compared with other proposals before him. In some cases a visit by one of his Engineering Inspectors will be arranged for this purpose.

It should be emphasised, however, that these works can be allowed only within a very limited capital investment programme and that local authorities should therefore defer further proposals for the present where practicable.

BUILDING LICENSING. Circular 59/52, dated 18 July 1952, addressed to Housing Authorities in England, refers to farm-houses and accommodation for farm workers in respect of building licences. To simplify administration, it has been agreed between the Ministry of Works and the Ministry of Agriculture and Fisheries that where the cost of the work for the farmer's own occupation is the major part of the total cost, the Ministry of Agriculture and Fisheries will accept the whole job, if licensed, as a charge against their investment allocation. Where the cost of the work required for providing separate self-contained living accommodation for farm workers forms the major part of the cost, the whole of the work, if licensed, should come out of the local authority's quota as work on existing buildings.

The issue of licences for new dwellings on smallholdings will continue to be the responsibility of local authorities, under the general terms of Circular 137/47.

The Circular 59/52 states that professional fees should be excluded from the amount of expenses estimated to be incurred in carrying out works of improvement under Part II of the Housing Act 1949, and they cannot be allowed to rank for grant under the Act. Professional fees

should continue to be taken into account in fixing the maximum selling price or rental to be specified in the condition to be inserted in licences for the building of new houses and for the conversion of a building into a house or houses.

Circular LRL 4/52, addressed to Housing Authorities in the London Region, refers to the Minister's review of the new free limits for building work which will be undertaken in the autumn. For this purpose the Authority is asked to supply information for the period 1 July to 31 August 1952, showing the number and value of applications (excluding new houses) received during the period for (a) £500 and (b) over £500. The number and value of licences granted under (a) and (b) and the number of applications refused under (a) and (b) is also required, together with the number and value of applications deferred under (a) and (b).

MINISTRY OF EDUCATION. Administrative Memorandum No. 413 (addendum No. 2), dated 29 July 1952, addressed to Local Education Authorities, refers to iron and steel distribution in connection with educational building, and to a new edition of the Appendix which was attached to Memorandum No. 413. The new Appendix contains notes on the issue of I. and S. sub-authorisations and the procedure to be followed. The Appendix contains 18 items, including electrical installations, fencing, gas installations, metal windows, second-hand steel and space heating and ventilations, and could, no doubt, be referred to in the Local Education Authorities' offices.

CENTRAL LAND BOARD. The Report of the Board for 1951-52 has now been issued, and is obtainable at H.M. Stationery Office, price 6d. The references to rebuilding and enlargement under the 3rd Schedule of the 1947 Planning Act and the Exemption Regulations call attention to announcements made during the year under these headings. These decisions of the Board have been quoted in these Notes at the time of announcement.

CONDITIONS OF TENDER FOR NOMINATED SUB-CONTRACTORS AND NOMINATED SUPPLIERS. In the JOURNAL for July 1951, at p. 368, Standard Conditions of Tender for nominated sub-contractors and nominated suppliers were printed. These Conditions were drawn up by the Quantity Surveyors' Committee of the R.I.C.S. and they ensure that the conditions of tenders do not conflict with the conditions of the principal contract. Whilst in some cases it may not be necessary to use the Conditions in their entirety, the provision of the relevant cash discounts and some of the items under 'General Conditions and Preliminaries' form a basis for obtaining tenders which may avoid misunderstanding when nomination takes place and contractors are about to enter into the sub-contract.

R.I.B.A. FORM OF CONTRACT. Mr. Howard A. Close, M.A., Legal Adviser to the National Federation of Building

Trades Employers, gave an address to the Royal Institution of Chartered Surveyors on 'The Evolution of the R.I.B.A. Form of Contract.' The Address has now been published by the N.F.B.T.E. in booklet form, and is obtainable at the offices of the Federation, 82 New Cavendish Street, London, W.1, price 1s. 6d.

The story of the Contract commences at about the middle of last century and brings the evolution up to the end of 1951. It is a very interesting narrative.

WAR DAMAGE COMMISSION. Cost of Works Claims. The War Damage Commission find that some misunderstanding seems recently to have arisen among professional advisers and others concerned with war damage repairs about the Commission's attitude to claims for work done or proposals for repair. Apparently there is an impression that the Commission have 'changed their policy' and are no longer prepared to accept any liability for any redecoration as a part of the war damage repairs.

This is not so. The Commission's policy always has been, and still is, to carry out the duty placed on them by the War Damage Act 1943, namely, to pay the proper cost of works executed for the making good of war damage where the occurrence of the damage was duly notified to them. But inevitably with the lapse of time—it is now more than seven years since the last bomb fell anywhere in this country, and in most areas longer still—and with the progressive accumulation of dilapidation, the Commission have been bound to scrutinise more and more closely claims for work done or schedules of proposed repairs in order to satisfy themselves what is the extent of the work (including decorations) which can properly be said to be required in order to make good the war damage (and therefore paid for out of public funds) as distinct from maintenance repairs. It is all the more necessary to bear this in mind now at a time when so many owners find it convenient to carry out at the same time both the repair of any outstanding war damage and of ordinary dilapidations accruing over the last ten years or more during which so little maintenance work has been possible.

The Commission wish to emphasise that when work of a typically maintenance character—minor plaster repairs and decoration—has already been carried out before they are approached, it must inevitably obscure the evidence of war damage which the Commission must have before they can admit a claim. They accordingly strongly recommend owners or those acting for them to put their proposals to the Commission before the work is done, so that they may know in advance to what extent (if any) the Commission can accept liability.

The Commission are now ready to give advance consideration to proposals for repair in all cases, whether the amount of work involved is small or large: the lower limit of £250 mentioned in R.O.D.1 no longer applies. (14 July 1952, Press Notice.)

Deputy Commissioner Appointed. The War Damage Commission have appointed Mr. W. E. A. Bull, F.R.I.C.S., F.A.I., to be a Deputy Commissioner. He will be concerned mainly with cases in and around London. Mr. Bull, who is a member of the Council of the Royal Institution of Chartered Surveyors, is sole principal of the firm of Vigers and Co., Frederick's Place, Old Jewry, E.C.2. (14 July 1952, Press Notice.)

ROYAL INSTITUTION OF CHARTERED SURVEYORS. Bills of Quantities. The Quantity Surveyors' Committee of the Royal Institution has considered a request from the N.F.B.T.E. that the builders should be supplied with a second copy of the bill of quantities (a) when a priced bill for the lowest tender is required to be submitted for examination, and (b) when a priced bill is required to be submitted with the tender. The Committee considers that this request is reasonable and commends to members the practice of supplying a second copy of the bill in the circumstances mentioned. The second copy, in the view of the Committee, could be properly supplied free of charge.

Division into Trades. The N.F.B.T.E. has expressed to the Royal Institution a preference for the splitting of bills of quantities into trades as being easier for the builder to handle. The N.F.B.T.E. has also suggested that the preambles to the trades should precede the trades instead of being set out in a separate bill. The Quantity Surveyors' Committee thinks that members will be interested to know the views of federated builders on these points. It is for the individual member or firm to decide what to do, according to circumstances. (R.I.C.S. JOURNAL, July 1952.)

Partnerships. An interesting paper on Partnerships and the Surveyor was read to the Junior Organisation by Mr. William James, F.R.I.C.S., and will be found in the R.I.C.S. JOURNAL for July 1952.

LAW CASES

Stern v. Collins. Court of Appeal, 23 May 1952. Sale of plot of land. Purchaser introduced by architect.

This was an appeal by the defendant against the order of the County Court Judge awarding the plaintiff, a chartered architect, £50 in respect of the introduction of a purchaser of a plot of land owned by the defendant.

The Court, in dismissing the appeal, said that the County Court Judge accepted the plaintiff's evidence as to the facts. The introduction of purchasers was not a normal part of an architect's business, but the Court of Appeal had to proceed on the findings of fact. On those findings the County Court Judge was right in drawing the conclusion that from the outset this relationship was a contractual one on the basis that the plaintiff would be remunerated. There was evidence on which the Judge's findings could be supported, and it was impossible for the Court of Appeal to interfere (THE ESTATES GAZETTE, 7 June 1952).

Hoenig v. Isaacs. The Court of Appeal decided in this case that in a contract for work and labour done for a lump sum payable on completion the employer cannot repudiate liability under the contract on the ground that the work though 'finished' or 'done' is in some respects not in accordance with the contract. Where the work is finished in the ordinary sense and there has been a substantial compliance with the contract, the price must be paid subject to set off or counterclaim in respect of any defect.

The Court held that when a man fully performs his contract in the sense that he supplies all that he agreed to supply, but what he supplies is subject to defects of so minor a character that he can be said to have substantially performed his promise, it is far more equitable to apply the principle above stated than to deprive him wholly of his contractual rights and relegate him to such remedy, if any, as he may have on a *quantum meruit*. ((1952). I.T.L.R. 1360.)

author's instigation of the recent clearance of the north wall of Cairo at a cost of £40,000 was a notable feat.

The impressively learned and meticulously detailed text is accompanied by about 700 illustrations, including elaborate plans, sections and details, as well as a great number of splendid photographs, mostly by Professor Creswell himself. The plans, again mainly his own work, are models of accurate surveying and draughtsmanship. Those of the great mosques of Al-Hakim and Al-Azhar are specially noteworthy. Mention must also be made of the fine drawings of the Fatimid gates of Cairo, by Maurice Lyon. All friends of Professor Creswell, and all admirers of his splendid work, must hope that he will be allowed to complete his stupendous task, even now only half completed. As he says in his Preface, the publication of these volumes was only made possible through the generosity of King Farouk, who continued the subvention made by his father.

M. S. B.

Book Reviews

The Muslim Architecture of Egypt. Vol. i: Ikhshids and Fatimids. A.D. 939-1171. By K. A. C. Creswell. 17½ in. xxvi + 292 pp. + 125 + (var.) pl. text illus. Oxford: Clarendon Press. 1952. £15 15s.

Professor Creswell's two previous volumes of this tremendous undertaking dealt with 'Early Islamic Architecture' in all countries up to the year 939, the end of the Tulunid dynasty. The new volume now under review is concerned with Egypt only, and is the first of a series describing the architecture of that country from 939 up to the Turkish conquest in 1517.

When the author first entered Egypt on military service in 1916 he had already made a study of Islamic architecture, and since the end of the First World War he has devoted himself to it entirely, with an assiduity that is truly remarkable. After he had produced several interim monographs, as one might call them, his first massive volume on 'Early Islamic Architecture' was published in 1932 and the second in 1940, uniform with the book now under review. They provided a learned and magnificently produced introduction to the detailed description of later Muhammadan buildings in Egypt that he has now undertaken. Most of those buildings are in Cairo, and almost the only defect that can be found in his work is that this information is not given in each case, though the location of all monuments described is stated on page 289 in his 'Summary'.

Professor Creswell claims that North African rather than Persian influence was the dominant factor in Fatimid mosque design in Egypt. Syrian and Armenian influence affected military architecture in Cairo just before the First Crusade, and had a consequent effect upon Europe. The

Timber Building in England, from early times to the end of the seventeenth century, by Fred H. Crossley. 10½ in. viii + 168 pp. + pls. text illus. Batsford. 1951. £1 10s.

F. H. Crossley's volumes on English mediaeval construction and craftsmanship are so well known as to be considered standard works. In his new book he returns to the subject to which he has devoted lifelong study.

Mr. Crossley begins by dealing with the forests and trees in an introduction and then traces the development of 'building devoted to religious purposes' from prehistoric circles—the forerunners of Avebury and Stonehenge—through the monasteries and churches, to the vicarages of the 17th century. He also devotes special chapters to steeples and belfries, to spires, to roofs and to porches, doors and lych gates. The second part of the book runs parallel to the first and deals with secular buildings from Neolithic pit-dwellings and Iron Age lake villages to 17th century house and hall construction. There are chapters on forts and castles, on bridges and on wind- and watermills.

In quoting so many examples of each variation and type of construction, the book has become a little difficult to read, but to have the information so recorded is of great value to those who wish to make a study of timber buildings or who have to deal with their conservation and repair. It is to be hoped that the sad tale disclosed by Mr. Crossley of the rapid destruction of so many buildings will serve as a warning, and prevent the loss of the remaining examples.

This book, while covering the subject very fully, does not deal with some aspects of historical construction, notably the development of timber-jointing technique, in which the carpenters showed such great ingenuity as the behaviour of structures became more fully understood.

The book is well produced and profusely illustrated with diagrams, photographs and drawings in the usual Batsford style, and

records a vast amount of valuable information, with numerous references to examples.

D. G. MARTIN [4]

Building for Investment, by Clinton H. Cowgill. 9 in. xiv + 482 pp. text diagrs. New York: Reinhold Publ. Corp.; Lond.: Chapman & Hall. [1951]. £2 16s. That a book with such a title should have been written by an architect will surprise, one imagines, most members of the profession in this country. Nowadays the subject sits uneasily on the British social conscience. There is, or seems to be, a rather unpleasant 19th century odour about it. But in the United States, where even today dreams of wealth can rapidly take solid shape—and very odd and exuberant shape, if critical eyes are diverted—it is an excellent thing that an architect should have taken the opportunity of talking to the business man on the elements of site selection and architectural design. It is as well, too, that the architect should learn something about the economics of building from the point of view of his client, the banker, industrialist or frank speculator in real estate. One hopes that some British architects may think it worth their while to read a few of these chapters, since the author, in addition to being an expert on American architectural practice and remarkably informed on all aspects of building finance, has compiled an essentially level-headed, factual book, mercifully free from propaganda. The reader need not be apprehensive. Clinton Cowgill makes no references to the wonders of the American way of life.

J. C. P.

Art and the Nature of Architecture, by Bruce Allsopp. 8½ in. xi + 124 pp. + front. + 8 pls. Pitman. 1952. 16s.

Whether it is possible to apply identical aesthetic principles to art and to architecture is a question too little discussed; and nothing is more dangerous than to found a philosophy upon a theory which is debatable but has not yet been debated. In *Art and the Nature of Architecture*, Bruce Allsopp has had the courage to apply to the practice of architecture *The Principles of Art* of the late Professor R. G. Collingwood, and his application is precise and lucid, even if at times the going is hard. It is just as lucid and hard as a mathematical theorem. But such precision, it seems to me, is both necessary and desirable, if only to free us from the present chaotic standards of criticism. Mr. Allsopp has no doubt at all that architecture is an art, and having attempted to define art he proceeds to show how technical skill and structural knowledge alone can never produce architecture, but can only produce building. 'Architecture,' he writes, 'is an emotional expression, the result of a stimulus which comes more from the mind and less from the senses than is the case with other arts.' This is the basis of the philosophy, and in the development of the theme Bruce Allsopp has, I think, made an important contribution. In fact, this little book is a remarkably comprehensive attempt to answer a very complex and

live question, a question which has been obscured for many generations by the trite dictum of commodity, firmness and delight.

CECIL STEWART [F]

Bedford by the River. A town planning report by Max Lock, David Grove and Gerald King. (Bedford Corporation.) Ob. $\frac{7}{8}$ in. \times 10 $\frac{1}{2}$ in. 140 pp. incl. pp. of illus. and 15 maps + folding plan. Murray. 1952. £1 1s.

Bedford is one of the smaller provincial towns of which normally very little notice is taken by any but architects and very little is generally known besides its industries. In point of fact, it proves to be very attractive, full of amenities and of antiquarian interest discernible with a little study. A Saxon church (St. Peter's), a cluster of 17th century and later municipal buildings, some fine schools of Blore's time and onward, an avenue of houses set back and forbidden high walls by restrictive covenants, a furniture works associated with Baillie Scott and extensive riverside walks are among its charms. One therefore welcomes the appearance of a work like this which, though strictly a town-planning report, gives (as such works often do) many illustrations, past and present, which demonstrate that attractiveness.

The reproduced 25 in. O.S. map, forming the front endpapers, shows the startling contrast between the mediæval huddle round churches and castle and the usual monotonous Victorian street lines. This is further developed in the chronological map of growth accompanying Chapter 2, The Background. The town-planning proposals are explained in all the other chapters—the text combines factual survey and prospective planning in one operation—with the usual outline maps and diagrams, including the vividly-coloured 'Town centre replanned' map that one has come to expect and enjoy. The area of the borough includes several outlying villages of interest, though not (curiously) the famous Elstow, of Bunyan fame.

H.V.M.R.

Grundrisslehre [planning information]: Die Stockwerkswohnung [flats], by Siegfried Stratemann. 2nd ed. 11 $\frac{1}{2}$ in. 196 pp. text illus. Berlin: Tempelhof. 1951. DM 24.

This is the second edition of an exhaustive analysis of every aspect of the planning of flats, illustrated with over 800 drawings. The publishers describe it as the 'Neufert of Housing', and the general arrangement of the book closely resembles that of the Bauentwurfslehre. Other volumes are planned which will deal with row houses (each intended for one family) and detached houses for single families.

J.C.P.

Switzerland, by John Russell. (Books on the countries of Europe Series.) 8 $\frac{1}{2}$ in. viii + 152 pp. + pls. + endpaper maps. Batsford. 1950. 15s.

Our Baedekers and Guides Bleus are strictly factual guides, devoid even of humour, unless one counts the unintentional humour which the years have introduced into the earlier editions. This is as it should be; personal comments, preferences

and prejudices only hamper the traveller who is taking the trouble to judge with his own eyes.

In his preface, Mr. Russell explains his intention 'rather to supplement than to replace the established guides to Switzerland'. He has been extremely successful in his task, and has produced a personal and witty book which will give pleasure to all those who know Switzerland and the Swiss, however superficially.

Most people's visits to the country are either gastronomic or sporting tours. Mr. Russell takes us rather on a literary pilgrimage, and although he dutifully visits all the buildings with his German guide book, it is the souvenirs of authors of the past which most excite his enthusiasm, and a path trodden by Gibbon or Madame de Staël, Rousseau or Voltaire evokes quotations and anecdotes in fascinating profusion and a variety of languages.

However, when we leave the shores of Lake Geneva, and its distracting phantoms, Mr. Russell really gets down to the business of showing us the countryside, which he does in the most attractive possible way. Wittily, shrewdly, and in beautiful prose, he tells us what to see and what to avoid, and describes the life of the inhabitants. Only occasionally do interludes by Rilke or James Joyce remind us that literary inspiration was not confined to Lac Léman.

Architectural descriptions, except for that of Einsiedeln, tend to be rather superficial, but this is partly intentional and partly inevitable. In the first place the author has probably been at pains to avoid duplicating the standard guide books. In the second place, it must be admitted that Swiss urban architecture has few characteristics which cannot be more profitably studied in France, Italy or Germany, and it is doubtful whether anyone would go to Switzerland to study the architecture alone. Nevertheless, those who read this attractive book cannot fail to have their appetites whetted by the buildings described and illustrated. Few of us will ever have the opportunity of making such a tour, but it is no mean substitute to have it described by such a sensitive and entertaining observer.

PETER COLLINS [A]

A Decade of New Architecture. Dix ans &c. Edited by S. Giedion. (Congrès Internationaux d'Architecture Moderne.) 9 $\frac{1}{2}$ in. viii + 232 pp. text illus. Zürich: Ginsberger. 1951. (£2 16s.)

This publication is a selective review of contemporary architecture between the years 1937 and 1947. It is selective in the sense that the work illustrated is mainly the product of architects from various countries who share a particular science of ideas which they express through the medium of the International Congresses of Modern Architecture (C.I.A.M.). CIAM was founded in 1928 and its history, aims and methods are described in the first part of the book which, in addition, includes the mature recommendations of Walter Gropius on the all-important problem of architectural education.

In the field of architecture a pictorial review of this nature becomes the equivalent of the Art Gallery which, to quote André Malraux, 'invites criticism of each of the impressions and expressions of the world it brings together, and a query as to what brought them together.' For all architects and students of architecture such a panorama provides a stepping stone on which future ideas can be developed. The illustrations are grouped in accordance with Le Corbusier's proposals for the C.I.A.M. Grid. This is a visual method of comparative analysis dealing with the four principal aspects of planning, namely Living—Working—Cultivation of Mind and Body—Transportation.

DENYS LASDUN [F]

Sciagraphy, by John M. Holmes. (New ed. of Architectural Shadow Projection [1930].) 9 $\frac{1}{2}$ in. vi + 58 pp. incl. pls. Pitman. 1952. 15s.

Here is a book on shades and shadows; not the exhaustive work that its title implies, but a friendly handbook on the principles of architectural shadow projection.

Mr. Holmes has divided his subject into five parts. The first three deal with the interruption of light by objects ranging progressively from a pin-head to a sphere. These should appeal to the probationer interested in Testimony I.B. Part Four contains rapid methods of applying shades and shadows to known forms. This may be useful to the classical scholar and Renaissance revivalist, but is a snare and delusion for the innocent probationer mentioned above.

In Part Five the effect of light on built-up forms is carefully considered. There is a warning in the preface that these built-up forms are to exploit the principles of shadow projection and for no other purpose; so, with an easy conscience, Mr. Holmes conjures up three architectural horrors and, in remorse, offers nine excellent examples of what James Gibbs would have called 'The Several Parts of Architecture.' The subject is exploited to the full on a circular Doric colonnade, complete with dome and drum. It is probably true that no contemporary building offers more intricacy for sciagraphy than Donato Bramante's Tempietto and, having mastered this, the student can shadow his own dome of discovery without a moment's hesitation.

Sciagraphy is a well-produced and trustworthy textbook above the usual level. The well-drawn examples always appear opposite the text, and the two are connected by the restrained use of lettered points.

R. H. FRANKS [A]

Memorial Volume to Sir Alfred (W.) Clapham. (Royal Archaeological Institute, ARCHAEOLOGICAL JOURNAL, Vol. cvi, Supplement.) 10 in. vii + 126 pp. + pls. text plans. 1952.

The late Sir Alfred Clapham's services to archaeology have been commemorated in a special volume of the ARCHAEOLOGICAL JOURNAL, which contains a memoir contributed by Mr. C. A. R. Radford, four un-

published papers edited and compiled from manuscript material which he left, and a bibliography of all his published work. Pre-Conquest and Romanesque architecture and sculpture were the subjects on which he was an outstanding authority, but the list of his writings shows the full range of his interests, among which monastic architecture always took a prominent place. The thoroughness of his scholarship can be seen in the Inventories of the Royal Commission on Historical Monuments in England, which between the wars achieved a new level of excellence, within the time-limit then imposed, thanks to the exacting standards which he set.

One of the four papers in this volume is concerned with the original form of the choir arcades at Tewkesbury Abbey. By careful observation and analogy these are shown convincingly to have consisted of a two-tiered colossal order in which the lower arches were subordinated to those of the tribune. The system occurs also at Romsey, Jedburgh, and—in a late version—at Oxford; but Tewkesbury seems to have been the earliest example. Some of the minor and little known Irish cathedrals are considered in a long paper illustrated with photographs and plans, and this is followed by extracts from three continental bede rolls of the early 12th century, which add much to our knowledge of the titles and personnel of English monastic houses at that period. The fourth paper, on the Gothic survival in England, is a mere sketch of the subject, and seems to have been put together many years ago.

Other contributions to this volume include a fresh study by Professor Geoffrey Webb of the west front of Peterborough Cathedral—an inexhaustible source of speculation—and a thrilling piece of research by Mr. A. R. Dufy, who inherited a Book of Hours about which nothing was known until he began to investigate and which he ran to earth in Morley Church, Derbyshire. There is in that church a 15th-century obit brass actually making reference to the Book of Hours and securely establishing it as a former possession of John Statham (died 1454), who is buried in the church.

ARTHUR OSWALD [Hon. A]

The Rise of the Skyscraper, by Carl W. Condit. 9½ in. xi + 255 pp. incl. 108 pls. Chicago: U.P.; Lond.: Cambridge U.P. 1952. £1 17s. 6d.

It must be stated at the outset that this book does not deal with the rise of the skyscraper. There is nothing in it on the early development of the masonry-built skyscraper in New York (such veterans as the Pulitzer and the Park Row buildings), nor on developments of the last 40 years—no Woolworth Building, no Empire State Building, no Rockefeller Center. Instead, the book is a history of the 'Chicago School', that remarkably interesting and progressive school first documented in a Museum of Modern Art pamphlet of 1940 and then in Dr. Giedion's *Space, Time and Architecture* of 1941. Mr. Condit is more detailed, and he has the advantage of over

100 illustrations, but he is strangely old-fashioned in his judgments. To him the ideal of architectural value is still complete utilitarianism and individual expression comes in usually as a reproof. A building must be good if it has nearly as much glass as Mies van de Rohe's Illinois Institute of Technology or as total an absence of any distinctive features as the Montgomery Ward Warehouse (which is called explicitly 'a good work of architecture'). Consequently Mr. Condit does not really like Sullivan and is happiest with Holabird and Roche.

But in spite of these shortcomings Mr. Condit's book is valuable. It gives more details on technical progress than have been at one's disposal so far, the invention of the façade entirely of iron and glass by Bogardus in 1848—of this Giedion had already spoken, and its parallels and successes in England have recently more than once been the subject of features in the ARCHITECTURAL REVIEW—then the invention of a true skeleton or steel-frame construction at the Home Insurance Building (by Jenney, 1883-5), the invention of the floating raft foundation at the Monadnock Building (by Root, 1889), and the caisson foundation at the Stock Exchange Building (by Adler, 1893). The earliest reinforced concrete building in Chicago incidentally was the Montgomery Ward Warehouse of 1908.

As for the architectural development, it can more easily be followed in the illustrations than in the text, which is divided by architects rather than dates. The story starts with the Great Fire of 1871 and the advent of a number of adventurous, young, and sufficiently tough architects from other parts of the States to settle down in Chicago. Not one of the leaders was born in Chicago—Jenney 1832 in Massachusetts, Adler 1844 in Germany, Burnham 1846 in the State of New York, Root 1850 in Georgia, Holabird 1854 in the State of New York, Roche 1855 at Cleveland, Ohio, and Sullivan 1856 in Massachusetts.

The earliest buildings illustrated by Mr. Condit, Jenney's First Leiter Building of 1879 and Adler and Sullivan's Borden Block of 1879-80, do not in any way go beyond what London and New York had done for 25 years and Greek Thompson, equally early, had refined to a remarkable degree. Architectural quality only appeared in Chicago in 1885 with Richardson's Marshall Field Store, and that was neither a skyscraper nor a building with an iron and glass façade. But it was, as Sullivan said, 'four square and brown, a monument to trade, to the organised commercial spirit, to the power and progress of the age, to the strength and resource of individuality and force of character', and it must have spurred the best of the young architects immensely. Sullivan's first mature designs, the Auditorium of 1887-89 and the Wainwright Building at St. Louis of 1890, were certainly indebted to Richardson. Root at the same time in the Monadnock Block (1889-91) achieved more independently a similarly powerful, taciturn style—still in masonry construction, which shows that

æsthetic and technical achievements do not necessarily run together. It is in the earlier work of Holabird and Roche that steel-framed, glass-fronted building first achieved architectural distinction: the Marquette of 1894, the Gage of 1898, and the McClurg of 1899—all elegantly proportioned and detailed. The direct outcome of this was Sullivan's famous Carson Pirie Scott store of 1899-1903, which Mr. Condit rightly calls the 'unchallenged masterpiece and the swan-song of the Chicago School'.

Mr. Condit does not perhaps sufficiently emphasise the fact that all-glass façades were just as much a fashion of c. 1900 in Europe and America—the People's Palace by Horta in Brussels, the Tietz store in Berlin, and so on—but a comparison of the Chicago buildings with these would only have strengthened his case for the unique functionalism of the early 'nineties at Chicago. To the Continental architects glass and iron were means of realising their personal varieties of *Art Nouveau*, and often realising them delightfully; whereas to Holabird and Roche and their Chicago competitors the new materials were a help in achieving uniformity of plan and maximum interior lighting such as were necessary for office buildings.

NIKOLAUS PEVSNER [Hon. A]

Electric Lighting, by C. E. Gimson. (Cleaver-Hume electrical series, No. 7.) 7½ in. 224 pp. incl. vi pls. text illus. Cleaver-Hume Press. 1951. 9s. 6d.

An experienced university lecturer lays down the general principles of good illumination for the student, the general reader and the electrical contractor and retailer.

Living in Lambeth 1086-1914, by Aileen Denise Nash. (Lambeth, borough: 'Our Lambeth' pamphlet No. 2. 8½ in. 77 pps. incl. (14) pls. Lambeth. [1950]. 2s.

This attractive and informative little history book is the work of the Librarian in charge of the Borough's Reference Library. It reflects much credit on the author and those who collaborated with her. The illustrations, mainly reproductions of old drawings, are especially interesting.

Correspondence

'THE GOTHIK TASTE'

SIR.—In the discussion following Professor Isaacs' lecture on The Gothick Taste I referred to some views expressed by William Whitehead about the decline of Gothic and the ascendancy of Chinese taste. I was quoting from memory, and I gave the incorrect date of 1752. The correct date is 1753, when William Whitehead discussed contemporary taste in THE WORLD, No. 12, published on Thursday, 22 March of that year.

Yours faithfully,
JOHN GLOAG [Hon. A].

Notes and Notices

NOTICES

Election Void

Under the provisions of Bye-law 17, the election as Associate of the following has been declared void: Mr. Anant Ramchandra Prabhawalkar.

Current R.I.B.A. Publications

The following is a list of the main R.I.B.A. publications with their prices.

Agreement, Forms of

Form of Agreement for General Use between a Building Owner (including a Statutory Authority) and a Firm of Architects.

Form of Agreement between a Local Authority and a Firm of Architects for Housing Work.

Form of Agreement between a Local Authority and a Firm of Architects for Multi-Storey Flats.

Form of Agreement between the Promoters and a Firm of Architects appointed as the Result of a Competition.

Price 6d. per form (inclusive of purchase tax). Postage 3d.

Certificates, Architects', Form Prepared by the Practice Committee

Copyright. Book of 100 Certificates.

Price 17s. 9d. (inclusive of purchase tax). Postage 1s. 1d.

Contract, Form of Agreement and Schedule of Conditions

For use with quantities: 1939 revised 1952. Copyright.

For use without quantities: 1939 revised 1952. Copyright.

Price 2s. 3d. per form (inclusive of purchase tax). Postage 3d.

Adapted for the use of Local Authorities, for use with quantities: 1939 revised 1952. Copyright.

Adapted for the use of Local Authorities, for use without quantities: 1939 revised 1952. Copyright.

Price 2s. 6d. per form (inclusive of purchase tax). Postage 3d.

Fixed Fee Form of Prime Cost Contract for use in the repair of war-damaged property, 1946 revised 1950. Copyright.

Price 2s. 3d. (inclusive of purchase tax). Postage 3d.

Cost Plus Percentage Form of Prime Cost Contract for use in the repair of war-damaged property: 1946 revised 1950. Copyright.

Price 2s. 3d. (inclusive of purchase tax). Postage 3d.

Examination, Intermediate, Questions Set At Price 1s. per examination. Postage 3d.

Examinations, Final and Special Final, Questions Set At

Price 1s. per examination. Postage 3d.

Forms of Articles of Pupilage

Copyright. Price 1s. 8d. (inclusive of purchase tax). Postage 3d.

Membership of the R.I.B.A.

Particulars of the Qualifications for Associate ship

Price 2s. 6d. Postage 3d.

Party Wall Notice Forms, for Use Under the London Building Act

Form A—Party Structures.

Form B—Party Fence Walls.

Form C—Intention to Build within Ten Feet and at a lower level than the bottom of the foundations of adjoining Owner's Building.

Form D—Intention to build within Twenty Feet of the adjoining Owner's Independent Building and to a depth as defined in Section 50 (1) (d).

Form E—Party Walls and Party Fence Walls on line of Junction of adjoining lands.

Form F—Walls or Fence Walls on Building Owner's land with footings and foundations projecting into adjoining Owner's land.

From G—Selection of Third Surveyor.

Price 7d. per form (inclusive of purchase tax). Postage 3d.

Prizes and Studentships 1952-53

Price 2s. 6d. Postage 3d.

Scale of Professional Charges

Price 3d. Postage 3d.

COMPETITIONS

Dow Prize Competition

The Illuminating Engineering Society offers a prize which will be awarded to the winners of a competition intended to encourage collaboration between students of illuminating engineering or of those branches of engineering concerned with illumination, and students in other fields in which applied lighting plays an important part. While entries from individuals are not excluded, the competition is primarily intended for students (under the age of 26) working in collaboration. The competition will be set and judged by a panel of Assessors appointed by the Society in co-operation with the R.I.B.A. and the Institution of Electrical Engineers.

Premium: £75 (and a certificate to each member of the winning team).

Certificates of commendation will be awarded to any other entries of outstanding merit.

Last day for submitting designs: 30 November 1952.

Relevant documents with instructions as to the form which entries should take and forms of application may be obtained from the Secretary of the Illuminating Engineering Society, 32 Victoria Street, London, S.W.1.

ALLIED SOCIETIES

Changes of Officers and Addresses

Royal Incorporation of Architects in Scotland.

Aberdeen Society of Architects: President, Leo Durnin. Dundee Institute of Architects:

President, A. C. Barrie. Edinburgh Architectural Association: President, W. H. Kininmonth.

Glasgow Institute of Architects: President, W. McCrea. Inverness Architectural Association:

President, R. Carruthers-Ballantyne. Stirling Society of Architects: President, L. C. Blakey.

Royal Society of Ulster Architects: Hon. Secretary, E. D. Taylor, 16 Donegall Square South, Belfast.

Northern Architectural Association. Cumberland Branch: Chairman, J. H. Haughan [F]. Teesside Branch: Chairman, R. W. Robson [L].

North Staffordshire Architectural Association: President, D. C. Campbell [L].

West Yorkshire Society of Architects. Huddersfield Branch: Chairman, Alderman J. E. Lunn [L]. Wakefield Branch: Chairman, Fred Scatchard [L].

South-Eastern Society of Architects. Kingston upon-Thames Chapter: Chairman, R. F. Alner [L].

Indian Institute of Architects: President, J. B. Fernandes [A].

Royal Australian Institute of Architects.

Tasmanian Chapter: Secretary, L. J. Farrell.

East Africa Institute of Architects. President,

E. D. Hill [F]. Hon. Secretary, R. W. J. Polkinghorne [A], P.O. Box 866, Nairobi.

(Communications should be addressed to 'The Hon. Secretary' and not to Mr. Polkinghorne by name.)

Berks, Bucks and Oxon Association of Architects: Week-end Course. Starting on Friday, 18 July, the Berks, Bucks and Oxon Association of Architects held a week-end conference at Missenden Abbey.

After dinner on Friday night there was a 'Brains Trust', with questions ranging from free planning and garden city layouts to queries regarding the desired level of a kitchen sink.

The first of Saturday morning's talks was given by Mr. Llewellyn Smith on 'Low cost housing'. The second talk was by Miss Cohen, B.A., on 'What a woman requires of an Architect'. The afternoon was spent on a tour of the historic buildings of Great Missenden conducted by the County Architect, Mr. F. A. C. Mauder, A.M.T.P.I. [F], assisted by Mr. J. M. Harries [A]. That evening a very enjoyable social and dance was held.

Sunday morning a talk was given by Mr. Peter Sheppard [A] on 'Landscape Architecture'. As all the lectures were held on the lawns of the Abbey—landscaped by Capability Brown—the environment was admirably suited to this last lecture.

GENERAL NOTES

Bernard Webb Studentship

The Bernard Webb Studentship for the historical and critical study of architecture, which is open to members of the Architectural Association and tenable under the auspices of the British School at Rome, has been awarded to Miss Sheila Gibson [A], who will study mosaic decoration in Italy.

The Rome Scholarship in Architecture 1952

The Faculty of Architecture of the British School at Rome announce the award of the Rome Scholarship in Architecture for 1952 to Mr. Duncan Ian Black, D.A. (Edin.) [A], The School of Architecture, Edinburgh College of Art. Mr. Black, who is 30 years of age, served for four years in the R.A.F.V.R., and completed his architectural course in 1950.

The Rome Scholarship in Architecture is provided for by an annual grant made to the British School at Rome by the R.I.B.A., and is normally tenable for two years, but may be prolonged in exceptional cases for a third year.

The Faculty had pleasure in noting that although the number of final contestants was small (4), the standard of work submitted was of much higher quality than in recent years.

R.I.B.A. Golfing Society

The annual match against the Royal Institution of Chartered Surveyors G.S. was played on Wednesday 16 July at New Zealand Golf Club, West Byfleet. The outing was very much enjoyed by all who took part at this beautiful course, and on this occasion the Surveyors were the winners by 9 matches to 6.

The annual summer week-end meeting was held at Royal Cinque Ports Golf Club, Deal. The weather was splendid and the course in grand condition. The results were as follows:

The Allensby bowl was won by H. St. John Harrison [F] with a score of 36½ points. The runner-up was G. Felix Wilson [L] with 34½ points. The Captain's cup and prize was won

by S. H. Statham [A] with a score of 90 minus 18=72, and the President's prize was won by G. Felix Wilson [L] with a score of 37½ points.

The Foursome bogey competition was won by A. D. McGill [A] and John Grey [F] with a score of 3 down.

The party was well looked after at the Royal Hotel, Deal, and it is hoped that more members will attend this meeting next year.

R.I.B.A. Cricket Club

The R.I.B.A. Cricket Club have played six matches during the season, and although they have not been successful in obtaining an outright win, one might be excused in claiming that the game against the Vitruvians was virtually won. This was largely due to some excellent bowling by Batty, who took 7 wickets for 47. The R.I.B.A. also did well in scoring 227 runs against the usual strong Club Cricket Conference team.

All the matches were keenly contested and have been enjoyed, we believe, as much by opponents as by the Club. The fixture with the L.M.B.A. was the first the R.I.B.A. has had with them, and we hope that it will continue to be an annual one.

Results of matches are as follows:

v. *L.M.B.A.* 21 May. *L.M.B.A.* 197 for 7 (decl.). J. Seward 81 n.o. A. F. Wallis 39. Cooper 3 for 55. Norton 3 for 56. *R.I.B.A.* 102. Hawkes 26. Burton 5 for 31. Garrett 4 for 39.

v. *Vitruvians*. 12 June. *Vitruvians* 159. Boyd 47. Mudie 31. Batty 7 for 47. *R.I.B.A.* 158 for 7. Brock 40. Fairbairn 37 n.o. Taylor 29 n.o.

v. *Blue Circle*. 22 June. *R.I.B.A.* 181. Douglas 38. Bristol 37. Harrison 25. Hulme 5 for 55. Paddison 4 for 62. *Blue Circle* 187 for 4. Gellatly 72. Patterson 54.

v. *A.A.* 25 June. *R.I.B.A.* 139. Boyd 40. Norton 29. Hawkes 26. Case 7 for 36. *A.A.* 140 for 6. Norton 4 for 28.

v. *Club Cricket Conference*. 17 July. *R.I.B.A.* 227. Hawkes 54. Bynoe 39. Robinson 34. Worsdale 3 for 49. Turton 3 for 61. *C.C.C.* 230 for 6. Davies 79. Sherwood 53. Micklethwaite 39. Cooper 3 for 55.

v. *R.I.C.S.* 6 Aug. *R.I.B.A.* First innings, 83 all out. Gray 4 for 14. Stanton 3 for 19. Second innings, 117 for 6. Taylor 47. Smyth 43 not out.

R.I.C.S. 176 for 8. Fletcher 62. Anderson 33. Batty 3 for 45.

Ministry of Housing and Local Government Circular No. 37/52: Services and Equipment in Houses. Approval was given to a recommendation of the Town and Country Planning and Housing Committee that a letter should be sent from the President to the Minister of Housing and Local Government. The Council were concerned at the probable effect of the circular on the maintenance of proper standards in housing. It was proposed to point out that while a reduction in expenditure was advocated, no indication was given of the means whereby it should be effected, and it was thought that it would be a false economy to abandon the provision of built-in cupboards, etc., since that would involve the tenants in buying furniture, with correspondingly increased demands on the furniture industry.

R.I.B.A. Standard Form of Contract. The Council approved amendments to certain Clauses of the R.I.B.A. Standard Form of Contract, recommended by the Joint Contracts Tribunal. The approval of the National Federation of Building Trades Employers having been given, the necessary amendment slips will be prepared for incorporation in the Form. Details of the amendments will be found in Practice Notes on p. 341 of the July JOURNAL.

Membership. The following members were elected: as Honorary Corresponding Members, 4; as Fellows, 17; as Associates, 107; as Licentiates, 11.

Students. Ninety-one Probationers were elected as Students.

Applications for Reinstatement. The following applications were approved: As *Licentiates*: Francis Norcott Hornibrook, Harold Samuel Knopp.

Resignations. The following resignations were accepted with regret: Mrs. Anne Margaret Goebel [A], Norman Douglas Good [A], Mordecai Pearlman [A], Ivan Charles Martin [L].

Applications for Transfer to Retired Members' Class under Bye-law 15. The following applications were approved: As *Retired Associates*: Vibert Middleton, Stanley Noble Rickard. As *Retired Licentiate*: Charles Henry Mead.

Obituary. The Secretary reported with regret the death of the following members: John Garrett Bennett [F], Sydney Charles Dowsett [F], Philip Burgoine Hudson [F]. Mr. Hudson was a past President of the Royal Victorian Institute of Architects. John James Joass [F]. Mr. Joass was Pugin Student 1892 and Owen Jones Student 1895. He was a past member of the Council and had also served on the Art Standing Committee, London Building Acts Committee, Stoppage of Building Committee and Honorary Members' Committee. William Sutherland Maxwell [F]. Mr. Maxwell was a past President of the Royal Architectural Institute of Canada. Harold Evans Rowland [F], Herbert John Wilson [F], William Petch [Retd. F], Richard Philip Roys Brocklebank [A], Alexander McLauchlan Duncan [A], Peter Bramley Taylor [A], John Haslam Wyld [A], Walter James Baker [L], Vincent Davison [L], Harry Pover [L], John Towneley Sugden [L], Sydney Wilson [L], Henry Graham Hunt Mills [Retd. L], Miss Irene Florey [Student].

By resolution of the Council the sympathy and condolences of the Royal Institute have been conveyed to their relatives.

MEETING HELD 1 JULY 1952

Appointment of Honorary Officers for the Session 1952-53: Messrs. C. H. Aslin [F], Martin S. Briggs [F] and R. E. Enthoven [F] were appointed Vice-Presidents. Mr. P. G. Fairhurst [F], as Chairman of the Allied Societies' Conference, became automatically a

Notes from the Minutes of the Council

MEETING HELD 17 JUNE 1952

Her Majesty's Patronage. The following letter has been received:

Privy Purse Office,
Buckingham Palace.
June 3 1952.

Dear Sir,

I am commanded by The Queen to inform you that Her Majesty has been graciously pleased to grant her Patronage to the Royal Institute of British Architects.

It will be in order for the words 'Patron—Her Majesty The Queen' to appear in future under the name of your Institute on all correspondence.

Yours truly,
(Signed) ULLICK ALEXANDER,
Keeper of the Privy Purse.

The President, R.I.B.A.

Birthday Honours. The congratulations of the Council were conveyed to the members on whom Her Majesty the Queen had conferred awards, as published in the June JOURNAL, p. 273.

King George VI Memorial. The President stated that he had received an invitation to serve on the Site and Statue Sub-Committee set up by the Lord Mayor of London but had suggested that the invitation should be transferred to Mr. Howard Robertson, President-Elect.

Appointment. National Consultative Council of the Building and Civil Engineering Industries: R.I.B.A. Representatives for the Year beginning 1 July 1952. Mr. Michael Waterhouse, Past-President, re-appointed, and Mr. P. G. Fairhurst [F], Chairman, Allied Societies' Conference, in place of Mr. Norval R. Paxton [F].

Direct Election to the Fellowship. The following Past-Presidents of the Tasmanian Chapter, Royal Australian Institute of Architects, were elected to the Fellowship under the provisions of the Supplemental Charter of 1925, Section IV, Clause 4: Raymond Nairn Butler, Albert Lauriston Crisp, Colin Ernest Philp, Bernard Ridley Walker.

London Architecture Bronze Medal. The Council took note of the decision of the Jury

entrusted with the award that no award of the London Architecture Bronze Medal should be made for the year ending 31 December 1951.

British Architects' Conference 1954. The Council accepted the invitation of the Devon and Cornwall Architectural Society to hold the British Architects' Conference in 1954 in Torquay.

Northern Architectural Association: Alteration to Rules. Formal approval was given to an application for an alteration to the rules of the Northern Architectural Association to provide in future for five Vice-Presidents instead of three.

Indigo Jones Tercentenary. The Council accepted an offer from the Ministry of Works of a wreath to place on the bust of Indigo Jones in commemoration of the tercentenary of his death.

Regional Housing Production Boards. The Council have been in correspondence with Sir Percy H. Mills in regard to the representation of the architectural profession on Regional Housing Production Boards. Representatives of the Council met Sir Percy Mills and discussed the question fully, and as a result the Minister of Housing and Local Government has agreed to the nomination by the President R.I.B.A. of a member in each administrative region, who will be available to be called on by the Production Board for consultation on matters of immediate importance to the profession.

Representation of Salaried Architects in Salary Negotiations. The Council approved the action of the Salaried and Official Architects' Committee in setting up a Sub-Committee to consider and advise on measures that should be taken to provide effective representation of salaried architects and architectural assistants in all negotiations affecting their conditions of service and salaries.

Code of Professional Conduct. An amendment to Clause 6 of the Code of Professional Conduct was approved, as published in Practice Notes on p. 340 of the July JOURNAL.

Vice-President under the provisions of Bye-law 28. Mr. Kenneth M. B. Cross [F] was appointed Honorary Secretary, and Mr. T. E. Scott [F] Honorary Treasurer.

The Honorary Fellowship: The Marquess of Salisbury, Earl Alexander of Tunis and Lord de L'Isle and Dudley have accepted the Council's nomination for election as Honorary Fellows.

Appointments

(a) **Council of the British School at Rome:** R.I.B.A. Representative: Mr. Anthony M. Chitty [F] in place of Mr. Martin S. Briggs [F]. (Note: The other representative is Mr. Kenneth M. B. Cross [F].)

(b) **National House-Builders Registration Council:** R.I.B.A. Representative: Mr. Kenneth J. Peacock [F] re-appointed for a further term of three years. (Note: The other two representatives are Mr. C. H. James [F] and Mr. A. W. Kenyon [F].)

(c) **B.S.I. Committee SAB/8: Chemical Sanitary Appliances:** Mr. D. E. Nightingale [F].

British Architects' Conference 1952: A hearty vote of thanks was passed unanimously in favour of the President and Council of the Royal Incorporation of Architects in Scotland and all those who had assisted in the recent successful Conference in Edinburgh.

New Members and Retired Members of Council: The President welcomed new members of Council, and on his proposition a vote of sincere appreciation of the services of those members who had retired since the last meeting was passed.

Exhibitions: The Council approved the recommendation of the Public Relations Committee that the following exhibitions should be held in the R.I.B.A. building:-

Exhibition of Mural Painting, arranged by the Society of Mural Painters, during April 1953.

Exhibition of Architectural Photography, arranged jointly by the R.I.B.A. and the Royal Photographic Society, to mark the Centenary of that Society in September 1953.

Research into Hospital Planning and Construction: On the recommendation of the Hospitals Committee, it was agreed to ask the Minister of Health to receive representatives of the Royal Institute in company with representatives of the Nuffield Provincial Hospitals Trust to discuss the setting up of an independent research body on hospital building.

Alteration to Rules: The Council approved an alteration to Rule No. 9 of the Federation of Malaya Society of Architects, designed to bring membership of that Society into conformity with the provisions of the newly-passed Architects' Registration Ordinance in the Federation.

Paint Colour Ranges: The Council considered a report of the Science Committee on discussions which had been held with the Paint Industry Colour Ranges Committee in co-operation with the British Colour Council. The following were appointed to serve on a committee to go into the question of preparing a fully co-ordinated paint colour range: Mr. W. A. Allen [A], Mr. C. J. Epril [F], Mr. S. Kad-

leigh [A], Dr. J. L. Martin [F], Mr. S. Rowland Pierce [F], and the Hon. Godfrey Samuel [F].

Students: 196 Probationers were elected as Students.

Applications for Election: Applications for election were approved as follows: *Election 7 October 1952:* as Honorary Fellows, 3; as Fellows, 9; as Associates, 30. *Election 4 November 1952 (Overseas Candidates):* as Fellows, 2; as Associates, 13.

Resignations: The following resignations were accepted with regret: Henry Appleton [L], Cecil Waterhouse [L].

Applications for Transfer to Retired Members' Class under Bye-law 15: The following applications were approved: as Retired Associates: Charles Henry Baker, James Stratton-Ferrier; as Retired Licentiate: William Henry Johnson.

Obituary: The Secretary reported with regret the death of the following members: William Albert Johnson [Retd. F]. Mr. Johnson was a past President of the Manchester Society of Architects and had represented that body on the Council and the Allied Societies' Conference. George Arthur Mitchell [Retd. F], John Knox Vinycomb [Retd. F], John Charles Harry Bawcutt [A], Leonard Charles Symes [A], Frank Atkinson [L], Hubert Arthur Hesketh [L]. Mr. Hesketh was for many years one of the examiners in the examination of candidates for the office of Building Surveyor under Local Authorities.

By resolution of the Council the sympathy and condolences of the Royal Institute have been conveyed to their relatives.

Obituaries

James Alfred Swan [F], past Member of Council and of the Registration Committee, died on 12 March, aged 78. A friend and fellow member writes of him: ". . . Though long known and much respected in the Birmingham area, where he practised for more than half a century, his outstanding qualities as an artist and architect were probably little recognised outside.

He was born in London, but the family moved into Worcestershire in his early boyhood from where, following his general education, Swan passed on to the Birmingham School of Arts and Crafts. There the opportunities to pursue his natural bent for architecture and craftsmanship led him to the winning of gold and silver medals and the promise of a brilliant career. Travel in Europe followed, in which process he developed considerable skill as a water-colour painter, specialising in street scenes that included interesting examples of mediæval architecture and were clearly influenced by the works of Samuel Prout. Some of his representations of Flemish and German house fronts appeared in architectural journals of the beginning of the century, e.g., *The Skipper's House, Ghent*. His water-colour drawing of the Cloth Hall at Ypres was presented by Mr. W. A. Cadbury to the Birmingham Art Gallery.

In the meantime, Swan was acquiring practical experience in London offices under such masters as Ernest George and Beresford Pite, becoming the latter's chief draughtsman for a time. His natural bent led him primarily in the direction of mediæval building and, commencing practice in Birmingham, he acquired considerable local repute as an ecclesiastical architect largely engaged in the refurbishing of ancient churches. In such ways he interpreted traditional Gothic in an original and modern

spirit. His deep knowledge of handicraft technique, and especially the working of wood and stone, greatly assisted the successful accomplishment of his work, examples of which are to be seen in the Whittington reredos; various works at Longdon Church, Rugeley; at Hartshill, Stoke-on-Trent; Arley near Coventry; pulpit, litany desk, choir stalls, and lych-gate at St. Agnes, Moseley; a screen, seating, and so on, to form the British Legion Chapel at St. Luke's, Cannock; and a cemetery chapel at Quinton. In all these modern craftsmanship is seen at its best. But his Mander Memorial (1932) in the Collegiate Church of St. Peter, Wolverhampton, is a masterly example of his capacity for design. Its main feature is a richly traceried and canopied oak screen, that included a 'gallery' stage, dividing an entrance bay of the south aisle from the nave and extending from the floor to the roof. New double doors and arch tracery were provided to the outer entrance of the church as a part of the memorial, and framing and inner doors were fitted to the base of the lofty and impressive nave screen. The effect of this fine composition is remarkable. The design was shown at the Royal Academy and in Paris, and so notable an interpretation of mediævalism deserves to be better known.

But Swan's aesthetic judgment was sufficiently catholic to make him almost equally at home in the Georgian manner. His restoration of Wrottesley Hall, Staffordshire, 25 years after total loss by fire, and the reconditioning of Rudge Hall, Salop, are illustrative of this and the quality of his taste. And a practical example of essentially present-day work was the Hatchford Brook School, Sheldon, which he carried out for the Birmingham Education Authority; a spread-out treatment of one and two storey blocks, with no pretence at stylistic design beyond pleasing proportions and sound brick and general technique. Even his public houses, of which he carried out many in the Wolverhampton area, strike a note of architectural

distinction rarely reached in such cases. The Giffard and Dudley Arms in Wolverhampton were, in their time, probably unrivalled for buildings of this class. It was so, in another sense, with his adaptation of the 15th century Stowe Heath Manor House (now the Greyhound Inn) in the ancient village of Bilston, for the enlightened brewery patrons who so often made use of his services. In quite another direction his competition design for re-planning the Birmingham Civic Centre was highly commended.

Though a fairly frequent exhibitor at the Royal Academy, Swan was a man who shunned publicity. Absorbed in the art to which his life was devoted, he appeared indifferent to the material rewards that are to many the primary aim of existence. If and when it came, he bore ill-fortune as an inevitable sacrifice to contentment of mind and spirit. The recent war took heavy toll of his health, to the discomfiture of many who, with good reason, valued his personality, high character and artistic distinction. It was fitting that the last rites which followed his passing were performed in the Yardley Crematorium Chapel, Birmingham, which he recently completed and where his ashes will rest.

Arthur Edgar Beresford, F.R.S.A. [F], died on 11 April 1952 at the age of 71.

The death of Mr. Beresford recalls a very famous partnership and one which had a pronounced influence on domestic design not only in this country but in continental countries as well. In this the dominant partner was the late M. H. Baillie Scott [F], but Mr. Beresford played a not unimportant part in their activities. He was articled to Mr. Isaac Massey of Alderley Edge, Cheshire, but as early as 1905 went as assistant to Baillie Scott in Gray's Inn. During the 1914-18 war he was in the employment of the Admiralty, but after the war returned to Baillie Scott as partner. After the death of Baillie Scott he carried on the practice,

but the Gray's Inn premises were bombed during the second war and in 1941 Mr. Beresford moved to Cornwall and joined Messrs. G. E. Wallis and Sons Ltd., contractors. In 1947 he became consulting architect to English Clays Lovering Poachin and Co., of St. Austell, and played an important part in the production of the Cornish Unit prefabricated house. In 1933 he was co-author with Baillie Scott of the book *Houses and Gardens* which, perhaps more than anything else, was influential in making public Baillie Scott's important contribution to domestic design.

Mr. J. Kennedy Hawkes [A] writes: "It was with very great regret that I heard of the recent death of my old chief and friend Edgar Beresford. I was articled to Messrs. Baillie Scott and Beresford in 1928, and spent three happy and most instructive years with them in Gray's Inn Square, London.

Their practice, in which they both took an active part, was chiefly domestic, and is so well known, both in the British Isles and abroad, as to need no further comment here. The untimely death of Baillie Scott during the last war ended the partnership, and Edgar Beresford went to live and practise at Newquay in Cornwall, and was responsible for much excellent architectural work in that county. Three years ago he came to see me and was obviously very ill; later his health failed to the extent that he was confined to his house, and could take no further part in the practical side of the art he enjoyed so much.

"Edgar Beresford was an exceptional architect, inasmuch as he combined a fine artistry and power of design with an enviable practical knowledge of the building crafts. His was a grand nature, kindly, tolerant, and humorous, and he was always ready to help and encourage the younger men of his time. He will be sadly missed; such men are rare."

Mr. John James Joass [F], former member of Council, died on 10 May 1952 after an illness lasting three months. He was 84.

Mr. Lesslie K. Watson [F] writes the following account of Mr. Joass' career:

"Mr. J. J. Joass had an exceptionally vigorous career, and was still actively engaged in the practice of architecture in his eighty-fourth year; indeed he got up from his sick bed to finish an important drawing for which his office was waiting.

"Mr. Joass was articled to Sir John Burnet in Glasgow, and he was the first of many doughty Scottish pupils who were later to seek their fortunes and make good in London. His skill as a draughtsman and water-colourist were so outstanding that he won both the Pugin (1892) and Owen Jones (1895) Prizes in days when competition for these honours was keener than it is now.

"He entered into partnership with Mr. John Belcher, R.A., in 1905, and after the latter's death in 1913 he carried on the practice alone. Joass was largely responsible for the design of the following buildings: Institute of Chartered Accountants; Colchester Town Hall; Royal Society of Medicine; Electra House; Mappin & Webb's; Mappin Terraces, Aquarium, etc. at the Zoo; Messrs. Whiteley's; Swan & Edgar's; Royal London House, Finsbury Square; Abbey House, Baker Street; Holy Trinity Church, Kingsway; Royal Insurance Building, St. James' Street; and Dorland House in Lower Regent Street.

"Such a practice seems to a private architect, living in these hard times, to belong to history. "J.J.J." himself fitted easily into the period of big business; he was happy when competition was keen, the risks great and the prizes worth winning. He could both give and take knocks.

"Over a long career he made a large number of friends in the building trade, and they served his clients well. There was quality and charm in his breezy Scottish manner, and a wit which could restore a tricky situation or demolish a feeble argument with unerring accuracy.

"He was prepared to fight for what he believed to be good architecture and, if need be, to resign. Sometimes he may have gone too far, but friends and foes alike admired his integrity.

"Like many other architects, Joass' chief hobby was sailing, and he owned one good yacht after another. The latest, *Mac nab*, which he largely designed himself, proved most successful both as a cruiser and as an ocean racer. Younger men were always eager to help him sail her, and she won many prizes, including first in A Division Class II of the Cowes to Dinard Race in 1951 when Joass was eighty-three. He was Rear Commodore of the Royal Thames Yacht Club, where his kindly personality and ability as a yachtsman will long be remembered."

Sir Ian MacAlister [Hon. A] writes the following appreciation:

"The news of the death of my old friend, J. J. Joass, is a painful reminder of the passing of a group of members of the R.I.B.A. whom I knew long before—at the end of 1907—I became associated with the Institute, John Belcher, Arthur Beresford Pite, William Flockhart, and "J.J.J." They were all connected with the old building of the Royal Society of Medicine, 20 Hanover Square, in which I came to live in 1889. Belcher and Pite were among the first of the tenants. I can still see Pite's eager face as he ran up the stairs to his office. On the wall of the staircase hung the famous "West End Club House" with which he won the Soane Medallion 70 years ago. When Pite left the Belcher Office he was succeeded by the silent young Scot from the far North, who won the Pugin Studentship in 1892 and the Owen Jones Studentship in 1895, for he was a brilliant draughtsman and a marvellous rapid designer.

"With his coming the old firm took on new vitality, and before long the new Whiteley Store in Bayswater, the new Royal Society of Medicine buildings in Henrietta Street and other buildings which were respected in their time bore witness to the energy and enterprise of the new partner.

"Joass came to London by way of the Edinburgh College of Art, and he was, I believe, one of those Highlanders of mixed Scottish and Norse blood who were a strong element in the population of the Northern Counties and Islands. He was always something of the "dour" Scot who would rather work than talk. He sat for a time on the Council of the R.I.B.A., but never to my memory opened his mouth at the Council table. It was not his field and he soon dropped out.

"Next to his art the passion of his life was sailing—small boat sailing. For many years he sailed his little yacht from its anchorage in Poole Harbour close beside his home. He was still sailing vigorously when he had passed the age of 80. I remember that he took me out in Poole Harbour and the bay outside some 30 years ago.

"The work and the ideas of his generation are entirely out-of-date now, but they had merits that will endure. He knew how to plan and to build, and he was a tremendous worker all through his life."

Mr. Joass' practice is to be carried on by Mr. H. Bramhill [F], who was his assistant for many years, and by Mr. Lesslie K. Watson, M.B.E., T.D., A.M.T.P.I. [F], who had been

working in association with him for a year before his death.

William Albert Johnson [Retd. F] died on 25 June, aged 67.

Mr. W. Cecil Young [F] writes as follows: "Will Johnson, after qualifying, shared the offices of Paul Ogden [F] in Manchester. They were both scholars and had a lot in common, but Johnson found the uphill task of building up a practice too difficult, and he was obliged for financial reasons to become an official architect with the C.W.S. Through his ability he became eventually their Chief Architect in Manchester. He was elected President of the Manchester Society of Architects in 1937 and held the office with distinction for two years. He was an excellent conversationalist and his after-dinner speeches were a delight to hear. His talks to students were the best I have ever heard. On his retirement from the C.W.S. in 1950 he still took an active interest in architecture, serving as he did on the Council of the M.S.A. until his death. His realistic outlook and guidance are a loss which we cannot estimate."

"He lost sympathy with the immediate present trend of architectural education. This he held to be based merely on exhibitionism. He was, however, in no way antagonistic to all modern forms of construction, as some of his commercial buildings testify. It is difficult to identify any particular building from his hand out of the mass of work he controlled, but I think that the C.W.S. Bank in Manchester, with its scholarly detail, shows most clearly his outlook, and this building is one which any cultured architect would be unashamed of acknowledging as his child. In the nineteen-thirties he carried out numerous factory buildings in contemporary design of high quality. He was quite unashamed of a building illustrating the function it was intended to fulfil.

"It is sad that he had not longer time in which to enjoy his very useful retirement."

Charles Hilbert Strange [Retd. F] died on 30 March at the age of 85.

Mr. Strange took an active part in the formation of the South-Eastern Society of Architects and became the first Chairman of the Tunbridge Wells District Chapter, which he represented on the Allied Societies Conference. He was also its Hon. Treasurer for some 16 years.

Mr. G. Gregor Grant [A], who became Mr. Strange's partner in 1929 and who now carries on the practice, writes the following appreciation:

"Mr. Strange was born and educated in Tunbridge Wells and spent five years in the drawing office of his father's building firm, seven years in the office of Robert Griggs, architect and surveyor of Gray's Inn Square, London, and four years with the Great Western Railway as architectural draughtsman. He joined the Architectural Association in 1887 and was awarded its silver medal for an essay on Renaissance Architecture in England.

"He became an Associate of the R.I.B.A. in 1891, began practice in Tunbridge Wells in 1898, and was elected Fellow R.I.B.A. in 1920. His principal works include primary schools in Tonbridge and Southborough, the Congregational church at Five Oak Green, Tunbridge Wells Corporation electricity works and early housing, Messrs. Charlton's premises on the Pantiles, various commercial offices and private houses, also additions and alterations to the Tunbridge Wells Equitable Society's offices and to the Tunbridge Wells Homoeopathic Hospital. In conjunction with Mr. Grant he did the new Baptist Tabernacle in Tunbridge Wells and other works.

'Mr. Strange was a member of his Town Council from 1901 for six years, and was largely instrumental in obtaining a public library for the Borough. He lectured at the Technical Institute on building subjects, and took great interest in the local art club, music festivals, and natural history society, of which he was for three years President.

'He was also for 25 years secretary of the Tunbridge Wells Free Church Council, and wrote a short history of the free churches, and also an account of Tunbridge Wells as an incorporated borough; both illustrated with his own sketches. He was also a branch treasurer of the League of Nations Union for 18 years and a member of the Rotary Club for more than 20 years.

William Lynn-Thompson [A] died on 10 February 1952, at the early age of 46.

Mr. Lynn-Thompson trained at the Regent Street Polytechnic School of Architecture. He was with the Architect's Department of the London County Council from approximately 1927 to 1932, then with a private firm, and with the Ministry of Works from 1940 to 1945. He then moved to Hawkhurst, Kent, and took up private practice. During this period he carried out the restoration of Rawlinson Manor, Rovenden, Kent. He was also appointed architect to the Borough of Tenterden and to Cranbrook Rural District Council in connection with their post-war housing work.

William Arthur Ross [L] died on 16 February 1952, at the age of 70.

Mr. Ross was articled to a Birmingham firm, and started in private practice in 1906 in Bradford. He continued practising in that city until 1952, opening a branch also in Southport, Lancs, in the 1930s. From approximately 1920 to 1928 he was in partnership with Mr. Alfred Lister Briggs, A.M.I.C.E., from 1928 to 1939 with his son, Mr. Melville Ross [L], and from 1950 to 1952 with Mr. Walter Crossley Roff [A].

Mr. Ross's principal architectural works included the Bradford Masonic Temple, showrooms, offices and workshops for various firms in Bradford, Leeds, and the surrounding district, besides private houses in the area. He specialised in fire loss assessing. Mr. Ross was for fifteen years a member of the Bradford City Council, and for some years Deputy Chairman of its Streets and Buildings Committee.

William Adam Forsyth [F] died on 5 November 1951.

Mr. Forsyth was a past member of Council, the Art Standing Committee and the Official Architecture Committee, and had served as an Assistant of the Board (Board of Examiners) and an Hon. Examiner. He also served for very many years as the R.I.B.A. representative on the National Trust.

Mr. E. C. Butler [L] writes the following appreciation:

'It was in the early part of 1919 that I was first introduced to W. A. Forsyth, he being in need of a junior assistant.'

'I think it is true to say that from the briefest contact with Forsyth one became immediately impressed by his courtesy and great kindness of manner. During the 30 or more years that I was associated with him, first as an assistant and later as his partner, there were very few occasions indeed when I heard him speak harshly or unkindly to anyone. Even travellers who by some amazing stroke of ingenuity found their way into his sanctum without an appointment were always kindly received, although their stay may have perhaps been of

short duration. From the commencement of his practice in 1895 he was in partnership with the late H. P. G. Maule [F]. This partnership, however, was dissolved in 1929.

'In his younger days he became well known for his work at many of our public schools, notably Repton and Shrewsbury. In later years he did a great deal of work at Eton College, Harrow, Rugby and Oundle Schools. He was also responsible for the original buildings at the University College of Hull. Perhaps, however, he was best known as a leading authority on the repair and restoration of ancient buildings. His long experience and skill in diagnosing their structural weaknesses brought him into prominence. The places where he was called in to advise are far too numerous to mention, even if they could be remembered. For many years he was consulting architect to St. George's Chapel, Windsor; and I suppose his "pet child" was Salisbury Cathedral, where he was the consulting architect from 1924 until his death in November last year. Like a "pet child", perhaps, Salisbury needed very careful and delicate handling, and the rebuilding of the top portion of the spire in 1950 was the last great work of repair which he supervised. At the age of 78 he climbed many times to the very top of this famous 404 ft. spire, a feat which might have strained the courage and the nerve of a man many years his junior.'

'He was a perfect gentleman and a thorough artist, and I am sure his passing is deeply regretted by all those who had the good fortune of his acquaintance and still more of his friendship.'

Alfred Burr [F] died on 10 April 1952 at the age of 97.

Mr. Burr was educated at University College School and then articled to Mr. Tayler Smith. He started in personal practice in 1877.

Mr. Burr had a large general practice. Among the more important of his architectural works were the British Columbia Government building in Regent Street, offices in the Strand for the Government of Victoria, Ranelagh Club and the restoration of Dr. Johnson's house. He also built a number of country houses in the home counties, and was architect to Messrs. Huggins and Co. Ltd., brewers, and to Messrs. Whitbread and Co. Ltd., and surveyor to the Licensing Justices of the St. Pancras Division.

Frederick Fisher Christian [A], A.M.I.Struct.E., A.M.I.E. (Aust.), aged 60, died at Christmas Island on 18 November 1950.

Mr. Christian trained at Melbourne Technical College and at the Bartlett School of Architecture, University of London. He then entered the employment of the British Phosphate Commissioners, in 1910, as resident civil engineer, and remained with them throughout his career, except for his period of war service in the First World War with the Australian Forces. He rose to the rank of Captain and was awarded the M.C. and Bar. At the time of his death Mr. Christian was Christmas Island General Superintendent, responsible for the taking over and for the production and shipping of phosphate from Christmas Island, Indian Ocean, for the governments of Australia and New Zealand; those governments having purchased the island from the Christmas Island Phosphate Co. Ltd. in December 1948.

John Stockwin Cleland, M.B.E. [F] died on 21 May 1950, aged 71.

Born in England, Mr. Cleland trained in a private office in this country and then went to South Africa early in the century. He first started in private practice in Cape Town, later

went to Pretoria and entered into partnership with Messrs. Cowin and Powers, Johannesburg, Mr. Cleland being the Pretoria representative. He subsequently entered the Public Works Department of the Union of South Africa and rose to be Chief Architect and, later, Secretary. On reaching retiring age he was retained by the Department as consultant.

Mr. Cleland did a good deal of work on South Africa House, London, under Sir Herbert Baker, and was present at its opening in June 1933. In particular, in collaboration with the then High Commissioner, Mr. C. T. te Water, Mr. Cleland was responsible for its furnishing and decoration.

Kenneth James Cooper [L] died on 15 February 1952, aged 52.

Mr. Cooper is believed to have trained in Andover, Hants, and then became assistant to Mr. Frederic William Lawrence, of Southbourne, and worked on the construction of a number of churches.

Mr. Cooper volunteered in 1941, and served in Egypt as Garrison Engineer with the R.E.S. He crossed the desert with the Eighth Army and did his share in the laying of the pipe line. There stands to his credit also a Garrison Theatre in Tripoli, which was given the name of 'Cooper's Corner' by his fellow officers.

Mr. Cooper was invalided out of the army in 1943, and from then until the end of January 1952, when illness overtook him, was an Assessor with the War Damage Commission at Bath.

John Goodman [F] died on 31 January 1952, at the age of 88.

Mr. Goodman was articled to a Birmingham architect about the year 1880. In 1890 he entered into partnership with Mr. Oliver Essex, and was associated with him in the design and erection of many large buildings in Birmingham, Liverpool and London, including cinemas and office buildings. The partnership, which lasted until 1939, produced winning designs in a number of competitions, including the Birmingham meat markets and a very large Birmingham warehouse. Since 1936, when Mr. J. A. Suggitt [A] joined him as a partner (the name of the partnership now being Essex, Goodman and Suggitt), a number of large multi-storey central office blocks and flat blocks have also been erected; as have various garages, banks and small factories.

Charles Evans Thomas-Medhurst [L] died in Montevideo on 7 January of this year.

Mr. G. E. Harris [L] supplies the following particulars:

'Mr. Thomas-Medhurst started his professional career in England. Leaving here to take up his residence in Argentina in the early twenties, he obtained his degree in Architecture at the University of Buenos Aires in 1906, and afterwards established a successful and extensive practice. Mr. Thomas Medhurst was one of the earliest members of the Sociedad Central De Arquitectos of Buenos Aires and was elected as a Licentiate of the R.I.B.A. in 1933. Many fine examples of domestic architecture in the English tradition both in and around Buenos Aires bear testimony to Mr. Thomas-Medhurst's professional skill and scholarship, as well as many more important works. For some years he held an important post connected with the Argentine Ministry of Public Works, and from 1928 to 1945 held the appointment of local architect in Buenos Aires for the Ministry of Works. From 1927 to 1945 he was senior partner in the firm of Medhurst, Thomas and Harris of Buenos Aires, and from 1945 until his death lived in semi-retirement at Punta del Este in the Republic of Uruguay.'

Mr. George E. Harris [L], at present at 69 Barkston Gardens, S.W.3, carries on the practice.

John William Tomlinson, A.M.I.C.E. (Retd. F), died on 20 February 1952, aged 75 years.

Mr. Tomlinson studied at Nottingham School of Architecture, and was for some time an assistant in the City Engineer's office. In 1898 he went to Carlisle as an assistant engineer, thence to Coventry about 1900, where he stayed for ten years. During the last six years there he was Deputy City Engineer. The rest of his working life, from 1910 to 1939, when he retired, Mr. Tomlinson spent in Luton as Borough Engineer and Surveyor.

During that period the population of Luton increased from approximately 50,000 to approximately 95,000; and Mr. Tomlinson was responsible for a commensurate increase in the town's public services and facilities. Among his works were: the lay-out of the municipal aerodrome; many highway improvements; large main drainage schemes; the reconstruction and widening of the River Lea; the design and lay-out of several recreation grounds; the design and construction of the public baths, Waller Street, and of the open-air swimming

pool, Bath Road; extensions to the Central Library; the weights and measures office; several schools; the new maternity hospital and extensions to the Spittlesea Isolation Hospital; the Beechwood Road Maternity and Child Welfare Clinic, and the Dallow Road School Clinic. Mr. Tomlinson prepared the original Luton 1922 Town Planning Scheme, and further extensions to it under the 1925 and the 1932 Town Planning Acts.

William Baillie [L], one time Vice-President of the Glasgow Institute of Architects, died 12 December 1951, aged 76.

Starting in 1902 after training in the office of Mr. G. T. Ewing-Crieff, Mr. Baillie practised in Glasgow throughout his career, concentrating chiefly on housing and schools, both for local authorities and private clients.

Robert Reid Mill, M.B.E., F.R.I.A.S. [L] died 26 January, aged 66.

Mr. Mill was Senior Architect in the Department of Health for Scotland; having come to that position via a post as architect and surveyor to the Royal Infirmary, Edinburgh, from approximately 1908 to 1920; architect to the Lanarkshire County Council from approxi-

mately 1920 to 1926; and in the Prison Department for Scotland, which was later incorporated in the Department of Health. Principal items among the many works for which he was responsible are prisons, fire stations and community centres.

Leslie Thomas Joseph Smith, A.M.I.Struct.E. [A] died on 18 February, aged 49.

Mr. Smith was articled to the late Mr. Ernest Cannell [F], of Holborn, from 1923 to 1926, and studied at the Northern Polytechnic.

From 1926-40 he was Chief Architectural Assistant to Mr. James Cannell, A.M.I.Struct.E [F], Holborn, and from 1940 to 1943 Deputy Shelter Engineer to Fulham Borough Council. From 1943 to 1946 he served with H.M. Forces, attaining the rank of Major commanding a works section in the Engineering Works Service (India). In 1946 Mr. Smith returned to Fulham Borough Council, first as Chief Architectural Assistant in the Borough Engineer's Department, later as Senior Assistant in the Housing and Public Building Department. From 1948 to 1952 he was Senior Architectural Assistant to Hackney Borough Council.

Members' Column

This column is reserved for notices of changes of address, partnership and partnerships vacant, or wanted, practices for sale or wanted, office accommodation, and personal notices other than of posts wanted as salaried assistants for which the Institute's Employment Register is maintained.

APPOINTMENT

Mr. S. G. Kamath [A] has been appointed Assistant Architect to the Public Works Department of Bihar at Patna. His address is P.W.D. Secretariat, Patna, Bihar, India.

PRACTICES AND PARTNERSHIPS

Mr. C. N. Byrom, A.R.I.C.S. [A] and **Mr. C. N. Bancroft [A]** have entered into partnership and will practise from Prudential Buildings, Station Road, Colwyn Bay, and 80 Mostyn Street, Llandudno. They will be pleased to receive trade catalogues, etc.

Messrs. Fairbrother, Hall and Hedges [L/L], of Barclays Bank Chambers, Birley Street, Blackpool, have taken over the practice of **Mr. Cecil Waterhouse**, late of 8 Cedar Square, Blackpool.

The practice of **Howard Leicester and Partners** has now been incorporated with that of **Mr. Norman Green [F]**, and will be carried on from 12 Adeline Place, Bedford Square, W.C.1. (LANgham 8577.)

The partnership between **Mr. Angus McDonald [A]** and **Mr. George Brown**, who practise under the style of **McDonald and Brown**, has been dissolved by mutual consent as from 1 January 1952. **Mr. McDonald** will continue to practise under the style of **McDonald and Partners**, 1 Unity Street, College Green, Bristol, 1, and Cremorne House, Church Street, Ellesmere, Shropshire, and would be pleased to receive trade catalogues, etc.

Mr. E. J. Robinson [A] has resigned his appointment with **Messrs. Grenfell Baines and Hargreaves**, but will be pleased to maintain contact with previous associates and receive trade catalogues at 3 Westcott Walk, Newton Aycliffe, Co. Durham, until further notice.

Mr. A. W. Ruse [L] now has his office at 17 Richmond Terrace, Clifton, Bristol, 8, and will be pleased to receive trade catalogues, colour cards, price lists, etc.

Mr. Kenneth Ward [F] and **Mr. Lawrence H. Ruddick [L]** have taken into partnership from 6 May 1952 **Mr. C. G. F. Ward [A]**, and the title of the late practice of **Ward, Porteus and Ruddick** has now become **Ward, Ruddick and Ward**. The address of 9 Museum Street, York, remains unchanged.

The partnership between **Mr. G. B. A. Williams [A]** and **Mr. J. S. Williams** has been terminated by mutual consent. **Mr. G. B. A. Williams** is continuing the practice under his own name at 282A Kensington High Street (off Melbury Road), Kensington, W.14. (WEStern 2638.)

CHANGES OF ADDRESS

Mr. Peter McG. Corsar [A] has removed his practice to Westminster Bank Chambers, 103 Commercial Road, Portsmouth.

Mr. F. R. Mutch [A] has removed to Flat No. 1, Allerton Mount, Duffield Road, Derby.

Mr. R. W. Paterson, A.M.T.P.I. [A], has removed from Diocesan Registry, Pitt Street, Gloucester, to Church House, College Green, Gloucester (20122).

Messrs. Stock, Page and Stock (Col. B. Culmer Page, F.R.I.C.S. [F], Mr. Terence Culmer Page, A.A. Dip. [F], Mr. James Maitland [A] and Mr. David Bowen-Davies, D.F.C., A.R.I.C.S.) have removed their practice to Fanshaw House, Fanshaw Street, London, N.1.

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Licentiate, after 15 years on his own and 30 years previously in partnership, about to retire, offers his practice on extremely reasonable terms. Centre of a south coast town. Box 58, c/o Secretary, R.I.B.A.

Associate, 41, with general all-round experience in this country and overseas, desires partnership or position leading thereto. Any district considered. Car owner. Capital available. Box 61, c/o Secretary, R.I.B.A.

Fellow requires partnership in Northumberland, Cumberland, Durham or North Riding. Considerable knowledge of town planning and surveying in relation to valuation and experience in all sections of the profession. Box 62, c/o Secretary, R.I.B.A.

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